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PATHOLOGY AND TREATMENT OF TUBERCULOSIS OF THE BONES AND JOINTS *

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I am sorry to say that Scotland is in the unenviable position of possessing, per head of the population, a greater proportion of surgical tuberculosis than is to be found in most countries, and as I have been Surgeon to the Royal Edinburgh Hospital for Sick Children for the past twelve years, I have had exceptional opportunities of studying the pathology and treatment of bone and joint tubercle.

Since Koch read his memorable paper at the International Medical Congress held in London in 1901, when he made the statement that "the bacillus of human tuberculosis was incapable of producing tuberculosis in bovines," and "the bacillus of bovine tubercle was to be considered as practically incapable of transmission to man, and that consequently the danger of contracting phthisis from the milk or meat of tuberculous bovines need no longer be guarded against," the relationship of these two forms of tuberculosis has formed the subject of much expert investigation, both clinical and experimental, in America as well as in Europe, and it is not too much to assert that, as far as the health of the community is concerned, the question is hardly less important than malignant disease.

Although the third report of the British Commission on Bovine Tuberculosis has not yet been issued,† enough evidence now exists to show that a large proportion of surgical tuberculosis, at any rate in children, is of bovine origin. My own clinical observations led me to this conclusion some years ago, and Drs. John Fraser and A. P. Mitchell, two of my assistants and former house surgeons at the Children's Hospital, who are now working, the former at tuberculosis of the bones and joints, the latter at tuberculosis of the lymphatic glands, are rapidly accumulating pathologic and experimental proof of this contention, but as their work calls for much careful experimentation, it will be some time yet before the results can be published.

The reason why bovine tuberculosis is so common among children in Scotland is due, mainly, to the prevalence of tuberculosis in dairy cows, to their inadequate veterinary inspection, and to the ignorance of the farmers themselves in matters relating to bovine tuberculosis. It is true that in the large towns there is a certain amount of inspection, but it is still very inadequate; for example, in Edinburgh one veterinary surgeon of the public health department is expected to examine all the cows (fully 2,800) supplying milk from the city byres at intervals of not more than three weeks, and in addition he endeavors to supervise the supply from the byres outside the city boundary. Referring to the city report for the year 1909, 1,531 inspections of the city byres are recorded as against twenty-two of the byres beyond the city. As a result of these examinations, thirty-seven cows which contributed to the city's daily milk-supply were ordered to be removed on account of their tuberculous condition. In thirteen of these cows the udders were involved, and in each tubercle bacilli were present in the milk.

It is left entirely to the dairykeeper to dispose of the diseased cow as he may think fit, so long as he has it removed within the stipulated time, viz., twenty-four hours after the official notice is served. Unfortunately a considerable proportion of these animals find their way to England, where they must, for a time, at any rate, continue propagating this disease.

The total inadequacy of this inspection for protecting the public against an undoubted fruitful source of infection is only too apparent, and the fact that the city milk-supply from the country is rapidly and steadily increasing every year strongly emphasizes the immediate necessity for some radical change.

A large proportion of the milk which comes into Edinburgh (and the same may be said of other large cities) is derived from dairy farms in the rural districts, many of which are under no veterinary supervision whatsoever. In the smaller towns and villages scattered throughout Scotland the milk-supply is derived from small neighboring farms.

As an example of what not infrequently happens, I may instance the following: A country child, aged 9 months, whom I operated on a few months ago for multiple osseous tuberculosis, proved to be a very instructive case. Dr. Mitchell, on investigating the milk-supply of the patient, discovered that of the six cows in the byre, two had tuberculous udders, with the milk from both teeming with tubercle bacilli.

Only recently I was asked to see a baby who, the mother thought, was suffering merely from the effects of teething. On examination the child was found to be suffering not only from multiple tuberculous dactylitis of the hands and feet, but also from tuberculous disease of the upper jaw, of both frontal bones, and of the cervical and mesenteric glands. No operation was recommended. Death occurred six weeks later from

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

* Owing to lack of space, this article has been abbreviated by the omission of several pages of text; but this omitted portion is included in the author's reprints and in the Transactions of the Section. A copy of the reprint will be sent on receipt of a stamped, addressed envelope.

† Since this paper was read, the report referred to has appeared. See THE JOURNAL A. M. A., Aug. 5, 1911, p. 491.

tuberculous meningitis. The parents were both free from tubercle, as also were the other children. On inquiring into the milk history, I was informed that two cows were kept on the home farm for the special use of the household; that they had both been tested, and that neither of them reacted to the tuberculin test, which had been applied six months previously. I suggested that they were probably too tuberculous to react, and that the best plan would be to kill them. This was done, with the result that both cows were found to be suffering from general tuberculosis, and that one of them had a tuberculous udder. I might instance other cases in which the evidence of milk infection was equally conclusive.

There was brought a short time ago to the Surgical Out-Patient Department of the Royal Edinburgh Hospital for Sick Children a child, aged 1 year and 5 months, suffering from multiple osseous tuberculosis. The following appalling history was elicited from the mother: The baby had been bottle-fed with milk obtained from a small dairy farm. The mother had been informed by the child's

Fig. 1.—Humerus of new-born child, showing the three sets of intra-ossal blood-vessels: (a) epiphyseal; (b) metaphyseal; (c) medullary. (After Lexer.)

Fig. 2.—First (?) metacarpal bone of new-born child. To show the large size of the main nutrient artery and the relatively small size of the epiphyseal and metaphyseal arteries. (After Lexer.)

grandfather, who worked on the farm, that soon after the birth of the child, one of the cows had "gone wrong." He told how the animal had rapidly wasted, become so weak that it was unable to stand; it was actually milked lying on the ground, and this milk was used for human consumption. By this time it was thought expedient to call in a veterinary surgeon who, finding the animal suffering from generalized tuberculosis with marked involvement of the udder, at once ordered its destruction and burial.

From what I have seen in the Children's Hospital, I cannot help but feel that we have begun at the wrong end in our endeavor to combat tuberculosis. In my opinion more real progress would have been made if much of the money that has been spent on sanatoriums for pulmonary consumption had been devoted either to the stamping out of bovine tuberculosis among dairy cows, or, if this be too great a financial undertaking for the country, means should at any rate be provided whereby every infant and young child may be supplied with sterilized milk. The question is one of national importance, and the sooner it is faced by the government the better. It is high time our municipal authorities began to tackle the problem in a really serious and business-like manner.

PATHOLOGY

There can be no doubt that osseous tuberculosis is practically always hematogenic in its origin, and that in a large proportion of cases the primary focus is situated in the lymphatic glands, especially the upper deep cervical set, which receive their lymphatics from the oral and nasopharyngeal cavities, including the faucial and pharyngeal tonsils. Next in importance come the bronchial and mesenteric glands. As the result of the caseation and destruction of these glands, the bacilli sometimes gain access to the interior of the small veins connected with them. They are then liable to be conveyed to the right side of the heart and thence through the lungs into the systemic circulation, by which they are distributed to various parts of the body. They may also reach the venous circulation through the thoracic

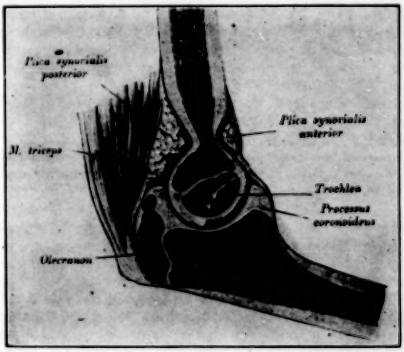

Fig. 3.—Vertical section through elbow joint of child, aged to show the relationship of the epiphysis and metaphysis of the humerus and ulna to the synovial membrane. (After Braune.)

duct. Having reached the peripheral circulation, they may become arrested in various parts of the body in the form of minute emboli. There can be no doubt that the bacilli are very frequently destroyed by the vital activity of the proliferating endothelial cells, as well as by the connective tissue cells and leukocytes; if, on the other hand, the resistance of the child is feeble, the bacilli take root and a definite lesion is the result.

Dr. Fraser is obtaining experimental proof of this theory by injecting the femoral artery of guinea-pigs with an emulsion of tubercle bacilli obtained from guinea-pigs injected with caseous material derived from osseous tuberculosis in children. He points out that it is important to tie the vein at the same time so as to favor the deposit of the tubercle by retarding the circulation. As the result of these experiments, he has been able to produce tuberculous lesions in the lower metaphysis of the tibia as well as in the metatarsal bones. These experiments will be published.

Before considering why it is that the bacilli are so liable to settle down and flourish in the bones, espe-

cially of children, we must first of all study the distribution of the blood-vessels in the growing bones. This has been done, more especially by Lexer, who has produced excellent stereoscopic illustrations of the arterial supply to the various bones by injecting them with a mixture of quicksilver and turpentine oil.

The intra-ossal vessels consist of three systems (Fig. 1): first the diaphyseal, which includes the main nutrient artery. This vessel, as soon as it has reached the medulla, divides into a short ascending and descending branch, each of which by a process of repeated bifurcation gives rise to a dichotomous system of vessels which terminate at the ends of the diaphysis by anastomosing slightly with the metaphyseal arteries. These latter, which form the second system, consist of a number of small independent vessels which perforate the metaphysis close to the epiphyseal cartilage. In addition, moreover, to the branches which supply the metaphysis and anastomose with the terminal twigs of the nutrient artery proper, others perforate the epiphyseal cartilage and end by anastomosing with the third system, namely, the epiphyseal arteries. These consist of a few small vessels which pierce the cartilaginous extremity of the growing bone to reach and supply the epiphyseal centers of ossification. The metaphyseal and epiphyseal arteries are derived from the vessels which go to form the periarticular anastomosis, and it is from this anastomosis that the ligaments and synovial membrane receive their blood-supply; and as it is chiefly at the ligamentous attachments that the metaphyseal and epiphyseal arteries enter the bone, it is obvious that there is a free anastomosis between the metaphyseal and epiphyseal arteries on the one hand, and those which go to supply the ligaments and synovial membrane on the other hand.

With regard to the intra-ossal vessels, it will be observed that the ultimate branches of all three sets anastomose in the region of the metaphysis, so that by whichever of the three routes the bacterial embolus finds its way into the bone, it is in this last situation that it is most likely to be arrested.

Moreover, we know that the ends of the diaphyses are very vascular, that the blood-vessels form wide capillary, in fact almost cavernous, loops immediately under the epiphyseal cartilage, and that the trabeculæ which surround them are very slender and imperfectly ossified. No doubt, too, the circulation is here comparatively slow, a circumstance which still further favors the arrest of emboli. We know also that very slight traumatisms may give rise to detachment or loosening of an epiphysis, and there can be no doubt that, as the result of contusions and joint strains, traumatisms may be produced in the neighborhood of the metaphyses, which, although they do not always produce macroscopic results, nevertheless may give rise to capillary hemorrhages, and this may serve to explain how it is that slight strains are liable to be followed by tuberculosis, the bacilli being arrested by the local damage to the circulation.

While joint tuberculosis may manifest itself as a primary synovial disease, it is more frequently the result of a secondary invasion from a primary osseous focus situated in the metaphysis of one of the bones which enter into the formation of the joint.

As, however, both the epiphyses and the metaphyses receive their blood-supply from the same source as the ligaments and synovial membrane, it is largely a matter of accident as to whether the disease begins in the bone or in the synovial membrane; indeed, there is no reason why it should not occur independently and simultaneously in both situations. It cannot be denied that the matter is important from the practical point of view, but, as I hope to show presently, the solution of the question is essentially an anatomic one, and I am convinced that much of the confusion and difference of opinion which exists with regard to the pathology of bone and joint tubercle has arisen from an insufficient appreciation of the importance of an exact knowledge of the anatomy and development of the extremities of the long bones in children, and of the relations of the epiphyses, or, I should say, of the ends of the diaphyses (metaphyses) to the synovial cavities of the joints (Fig. 3).

From what has already been said it will be gathered that, in children, the most common situation to meet with a primary osseous focus ought to be the metaphysis and not the epiphysis, and my experience at the Royal Edinburgh Hospital for Sick Children has convinced me that this is actually the case. This I have taught for some years past, and it is difficult to understand why our modern text-books still make the statement that primary tuberculosis of the long bones usually starts in the epiphysis. This may be the case in adults, but it is certainly not so in children. Take, for example, the *elbow joint* in a young child: First, with regard to the humerus, we find that apart from the two epicondyles, which we may leave out of consideration, its lower epiphysis is made up merely of the articular portion of the bone; and of the two centers of ossification which go to form it, the outer (capitellar) does not begin to ossify till the second year, and the inner (trochlear) not until the eleventh year. Hence we see that up to the second year of age the lower epiphysis is entirely cartilaginous, and it is universally agreed that tubercle never begins in cartilage. It follows, therefore, that if a child under two years of age develops a tuberculous elbow joint secondary to disease in the humerus, the disease must have begun in the diaphysis and not the epiphysis.

Fig. 4.—Os innominatum of new-born child showing leash of vessels descending to the acetabulum from the large nutrient artery of the ilium. (After Lexer.)

Similarly, the upper epiphysis of the ulna forms not much more than the tip of the olecranon process, and involves only a very small portion of the articular cartilage; indeed, sometimes the *whole* of the cartilage of the greater sigmoid cavity is developed from the diaphysis. The small size of the upper epiphysis of the radius is familiar to all, and it does not begin to ossify until the sixth year. It follows, therefore, that when the elbow joint is involved secondary to an osseous focus, that focus almost invariably begins either

in the lower end of the diaphysis of the humerus or the upper end of the diaphysis of the ulna.

It is well known that in children tuberculous disease of the elbow joint is much more frequently met with than in the shoulder or the wrist, and here again we have an anatomic explanation, namely, that the nutrient arteries all run towards instead of away from the elbow.

What has been said with regard to the elbow applies almost with equal force to the *hip-joint*. The upper epiphysis of the femur comprises merely the articular extremity of the bone. The whole of the neck, therefore, belongs to the diaphysis, and is it not a matter of common observation that when the hip-joint is involved secondary to an osseous focus that focus is situated almost invariably either in the neck of the femur or in one of the three elements which go to make up the acetabulum? As the acetabular ends of the innominate bone possess no epiphysis, they may, from the present point of view, be regarded as metaphyseal and not epiphyseal; and a glance at Lexer's figure of their blood-supply supports this view (Fig. 4). While, however, the upper epiphysis of the femur is small, it must be remembered that its ossification commences within the first year, so that it may, in quite exceptional cases, be the seat of a primary focus.

When we come to study the anatomy of the *knee-joint* in relation to tuberculous disease, we find that, unlike the elbow, its epiphyses are of large size, and, moreover, that they begin to ossify very early. My experience has been that primary synovial disease is more frequently met with in the knee than in any other joint. In the comparatively rare cases in which it is secondary to an osseous focus, that focus, I admit, is generally met with either in the lower epiphysis of the femur or the upper epiphysis of the tibia, but by this I do not wish to imply that the disease does not occur with even greater frequency in the adjacent metaphyses.

This leads us to another point in the anatomy of the ends of the developing long bones which is of great importance clinically, and which serves to explain why some joints are so much more liable to be involved (and so much earlier involved) than others secondary to a focus in the end of a diaphysis. It may almost be stated as an axiom that the smaller the epiphysis the more likely, or, in other words, the earlier, does the adjacent joint become involved, because the smaller the epiphysis the more closely is the end of the diaphysis (metaphysis) related to the joint. For example, the olecranon, the coronoid, and the radial fossæ, which belong to the lower end of the diaphysis of the humerus, are all covered by synovial membrane, and are therefore just as much intra-articular as is the lower epiphysis. In excising the elbow joint in a child we all know how frequently the synovial disease is found to be secondary to a focus in the lower end of the diaphysis of the humerus which has perforated into the joint through one or other of these fossæ. The same applies to the upper end of the ulna. The hip-joint is another good example, because the metaphysis, which is formed by the neck of the femur, is almost entirely intra-articular. The epiphyses at the knee, the lower epiphysis of the tibia and the upper epiphysis of the humerus are, on the other hand, relatively much larger; the corresponding joints are therefore much less likely to be involved—or are much later involved—secondary to metaphyseal foci, because these foci are very liable to perforate the cortex of the bone outside the limits of the synovial membrane.

MORBID ANATOMY AND PROGRESS

We shall now discuss shortly the morbid anatomy and the progress of the disease as it occurs at the growing end of the diaphysis of one of the long bones. As this is the seat of election it is desirable, not only to describe it first, but, in order to emphasize the condition as a separate entity, to give it the definite name of *tuberculous metaphysitis*, a name which will, moreover, distinguish it from the two other conditions to be referred to later, namely, *tuberculous epiphysitis* and *tuberculous diaphysitis*.

TUBERCULOUS DIAPHYSITIS

In tuberculous diaphysitis of the long bones proper the disease may start either in the spongy tissue at a little distance away from the metaphysis or in the medullary canal, and in each situation the disease may present itself either as a more or less circumscribed focus or as a diffuse infiltration which may involve the whole length of the medullary cavity (Fig. 5). As the disease is of hematogenic origin, it will generally be found to occupy either the upper or lower half of the diaphysis, according to whether the bacterial embolus enters the upper or the lower division of the nutrient artery. As already stated, it not infrequently happens that a primary focus beginning in the metaphysis spreads as a tuberculous infiltration into the medullary cavity so that it is not always possible to draw a sharp distinction between metaphyseal and diaphyseal tuberculosis.

Fig. 5.—Vertical section of the lower half of the diaphysis of the femur resected subperiosteally from a child, aged 13 years. It shows the naked-eye appearances of a diffuse tuberculous diaphysitis with the formation of an elongated central sequestrum.

The circumscribed form of the disease generally occurs as a soft, caseous, avascular focus, surrounded by an advancing zone of active tuberculous tissue of a greyish color, semi-transparent and slightly vascular. The surrounding bone, apart from its increased vascularity, may appear almost normal; in some cases it is rarefied, while in others again, especially if the disease be very chronic and tending to heal spontaneously, it is more or less sclerosed (Fig. 6). Sometimes the focus contains one or more small sequestra, but even when the sequestrum is single, it is seldom of large size. Only rarely is the focus represented by a chronic abscess, and when this is the case the wall of the abscess does not present the smooth sclerosed surface met with in the chronic staphylococcal abscess of Brodie.

The congestion set up in the surrounding bone by the presence of the tuberculous focus in its interior spreads through the Haversian systems to the periosteum, with the result that a formative osteoplastic periostitis is set up, which gives rise to the deposit of layer after layer of new bone between the periosteum and the cortex. It is this sheath of subperiosteal new bone which

gives to the disease its most important and characteristic diagnostic sign, namely, thickening of the diaphysis; indeed, in the early stage of the disease this is the only physical sign present. Its importance, therefore, cannot be overestimated (Fig. 7).

As the disease almost invariably occurs during childhood, congenital syphilis, pneumococcal and other pyogenic infections, when subacute, are the chief conditions with which it is likely to be confounded. The presence of tuberculous lesions elsewhere in the body, or the presence or absence of a syphilitic history, will generally suffice to clear up the diagnosis. Radiography will demonstrate the position, size and shape of a focus, the presence or absence of a sequestrum, and the thickness and extent of the subperiosteal sheath of new bone. It should therefore always be resorted to before proceeding to operation, as it shows exactly how much bone should be removed.

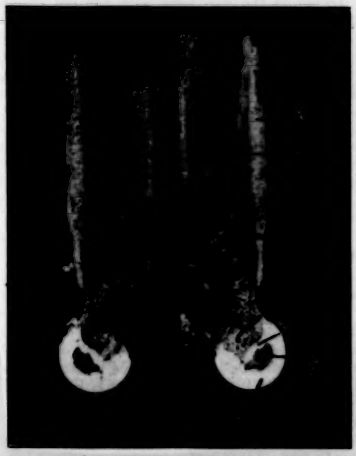

Fig. 6.—Sagittal longitudinal section of lower third of humerus resected subperiosteally from a child, aged 2 years: (a) thick sheath of new subperiosteal bone; (b) original compact bone of cortex; (c) caseous infiltrating tubercle of marrow spreading upward from a focus in (d) the metaphysis; (e) olecranon fossa perforated by the tubercle; (f) tuberculous synovial membrane; (g) ossific center in the capitellar portion of lower epiphysis; (h) cartilage of epiphyseal disc; (j) articular cartilage.

A radiograph, however, cannot always be relied on to settle the diagnosis between tuberculous and other forms of osteitis, especially when the former condition is very chronic and associated with an abundant formation of new subperiosteal bone, as this bone, along with the original cortex, obscures the view of the interior of the bone.

Pathologists and clinicians have been so much in the habit of regarding periostitis and superficial formative osteitis as the main feature of congenital syphilitic bone lesions, that they appear to have lost sight of the fact that the same condition is met with in tuberculous osteitis; and the result has been that many cases of tuberculous disease of the diaphysis have been looked on as syphilitic.

OPERATIVE TREATMENT

The operative treatment of primary tuberculous osteomyelitis of the diaphysis consists in the first place in freely exposing the bone at, as well as a little above and below, the seat of the disease. The incision is so planned that the dissection occasions the minimum of injury to the soft parts. An intermuscular plane is chosen which avoids injuring, more especially, the nerve-supply to the muscles.

The method usually adopted is, after freely opening up the bone with a chisel, to gouge and thoroughly scrape away the diseased focus. This having been done, either some preparation of iodoform or pure phenol is applied to the wall of the cavity; the latter is then stuffed with iodoform gauze or filled with Mosetig-Moorhof's iodoform-wax filling.

While the above method is that which has been invariably employed by those surgeons who have recorded cases of the disease, I am strongly of opinion that such a procedure should be the exception rather than the rule. The early results of such a method of treatment are satisfactory enough, but unfortunately it too often happens that the patient sooner or later returns with the scar tuberculous and the seat of a sinus leading down to further disease in the bone. Such a result is not to be wondered at when we consider how difficult it is to remove all the affected area by the gouging process.

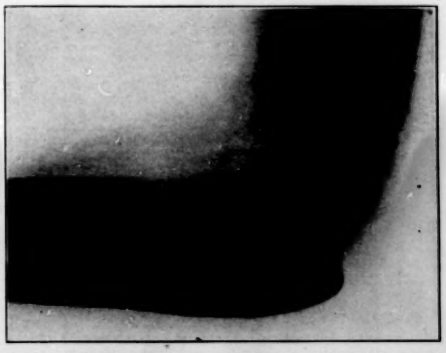

Fig. 7.—Circumscribed tuberculous focus in upper metaphysis of ulna of child aged 4 years. Upper third of ulna thickened containing tuberculous abscess cavity surrounded by a well-defined wall of sclerosed bone. Joint not infiltrated. A typical case for curetting.

After a few such disappointments I have for a number of years past treated the affection by subperiosteal resection of the diseased part of the diaphysis. Care is taken to divide the bone well above and below the focus; in short, the disease is dealt with radically, as if it were a malignant tumor.

By the aid of radiography, the disease can be diagnosed in its early stage, before the focus has perforated the bone. This is the most favorable stage for operation, as the knife can be kept outside the infected area. No iodoform or other antiseptic need be applied to the wound, no stuffing is introduced and the wound can almost invariably be closed without drainage.

The best instrument for dividing the shaft of the bone is Gigli's wire saw. This is passed round the shaft inside the periosteum, which is thoroughly separated all round with a suitable elevator. For introducing the saw behind the bone, I use an instrument which resembles

somewhat a broad flattened aneurysm needle with an oblique slit leading into a large eye placed as close as possible to its extremity. After the instrument has been passed behind the bone and the eye made to project on the opposite side between the bone and the periosteum, the loop at the end of the wire saw is hooked into the eye by means of the slit above mentioned. By withdrawing the instrument, the saw is carried behind the bone; the handles are then hooked on, and the bone is sawn across. In young children the bones of the forearm may be snipped across with ordinary bone forceps, but this instrument leaves a bruised and less even section, with the result that there is often some irregularity subsequently where the new bone joins the old. By using Gigli's wire saw, on the other hand, it is often almost impossible, even with a radiograph, to tell, after the new bone has completely developed, where the bone had been divided.

After the diaphysis has been divided beyond one extremity of the lesion, a strong hook is introduced

Fig. 8.—Tuberculous focus in upper metaphysis of ulna. Child aged 4½ years. Focus has not yet involved the elbow joint and there is considerable thickening from the deposit of new subperiosteal bone.

into the medullary canal, and while the divided end is forcibly dragged upward the periosteum is separated from the deep surfaces of the bone until it is freed to a little beyond the opposite limit of the diseased focus. When this level has been reached, Gigli's saw is again applied and the bone divided. The sawn surfaces of the segment of bone removed are carefully examined to make sure that they are free from disease; if not, more bone must be removed.

If the disease has involved the metaphyseal extremity of the diaphysis the diseased segment must be removed right up to the epiphysis. After sawing across the diaphysis, the separation of the diseased portion from the epiphysis is effected by seizing its divided end and wrenching it away from the epiphysis. When this has been done it will be found that the epiphyseal cartilage, instead of coming away with the diaphysis, is left firmly attached to the epiphysis. This is what one would expect on anatomic grounds; were it otherwise, the radical operation would be contra-indicated on account of the shortening which would result. As long as the disease has not actually involved the epiphyseal cartilage itself, I have found that the above operation does not give rise to any subsequent shortening.

The bleeding from the periosteal tube seldom amounts to more than a general oozing, which soon ceases. Occasionally the main nutrient artery requires to be ligatured. After the bleeding has practically ceased, the periosteal tube is closed with a buried catgut suture. Care is taken to suture carefully the two extremities of the incision in the periosteum in such a way as completely to cover the sawn stumps of the bone. It is this precaution, combined with the use of Gigli's saw, which enables Nature to effect such a remarkably accurate fusion of the new bone with the old stump. In suturing the periosteum, I prefer to use an interrupted rather than a continuous suture, for, should the periosteal tube become overdistended with blood, the tension is removed by some of the blood escaping between the sutures.

A few cutaneous catgut sutures are also employed to stitch the deep fascia, and, in the case of a deep bone such as the radius or fibula, the muscles are also stitched, either along with, or separately from, the periosteal tube. The operation is completed by closing the skin wound with interrupted sutures of silkworm-gut.

AFTER-TREATMENT

The after-treatment consists in keeping the leg quiet for some weeks, after which period it is put up in a suitable splint (or perhaps in plaster of Paris) until the new bone is sufficiently well developed to allow the patient to begin to use the leg. If the disease has not involved the periosteum, the new bone, as already stated, is perfectly reformed in from three to six months. If, on the other hand, the periosteum has been invaded by the disease, the reproduction is less perfect and some deformity is liable to result.

To reach the shaft of the fibula, the dissection should be made along the intermuscular septum (posterior peroneal) which separates the peroneal from the flexor muscles so as to avoid injuring the superficial peroneal nerve which occupies the septum (anterior peroneal) between the peronei and extensors. In resecting the upper half of the diaphysis care must be taken not to injure the common peroneal nerve.

While tuberculous diaphysitis of the tibia is about equally common in its upper and lower halves, in the case of the humerus, on the other hand, it is met with very much more frequently in the lower half of the diaphysis, owing, as already stated, to the fact that the nutrient artery is directed downward. In resecting the lower half of the diaphysis of the humerus, the incision is begun on the back of the external condyle and carried vertically upward, immediately behind the external intermuscular septum as far as the musculospiral groove. The bone is reached by deepening the incision through the fleshy fibers of the inner head of the triceps. The musculospiral (radial) nerve and superior profunda vessels are carefully freed and retracted forward and upward. If the disease extends higher up than the middle of the shaft, some of the fibers of the outer head of the triceps must be divided in an upward and backward direction parallel to and behind the musculospiral nerve, the external cutaneous branches of which are

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divided. The periosteum is divided along the whole length of the wound, and the bone, after having been divided at the requisite level, is completely freed from the periosteum, and then wrenched away from the lower epiphysis. In spite of the fact that the capsule of the elbow joint is attached to the bone considerably above the level of the epiphyseal cartilage, in wrenching away the diaphysis from the latter, the cavity of the joint is *not opened into*, because the operation is done subperiosteally.

In the after-treatment it is important to keep the periosteal tube on the stretch so as to prevent shortening and angular deformity. This is best done in the manner already described under excision of the elbow, namely, by applying extension to the hand with the limb abducted and the forearm extended and supinated. The elbow should not be bent until the new bone is well formed.

Another common site of tuberculous diaphysitis is the diaphysis of the radius, especially its lower half.

Resection of the lower third or so of this bone ranks among the commonest of these operations. The incision is commenced a finger's breadth below the dorsoradial tubercle on the back of the lower end of the radius—a tubercle which separates the groove for the extensor carpi radialis brevior from that for the extensor secundi internodii pollicis (pollicis longus)—and is carried vertically up the middle of the lower half of the back of the forearm. The deep fascia, along with the upper part of the posterior annular (dorsal carpal) ligament, is divided, and the outer border of the extensor communis digitorum is identified and freed. To expose the radius, this muscle is retracted inward, while the fleshy bellies of the extensor ossis and extensor primi internodii pollicis are retracted well upward and outward. The fibers of the latter muscle are partly detached from their origin from the back of the radius. The periosteum is now divided longitudinally as far upwards as is necessary. After dividing the radius and hooking it up into the wound, the periosteum is separated from the anterior aspect of the bone, and the latter is wrenched away from the lower epiphysis.

In some cases the disease involves the greater part of the diaphysis of the radius so that the bone has then to be divided immediately below the bicipital tuberosity. In these cases the best plan is to react the lower half or so of the bone in the first place, and then to complete the operation by continuing the dissection upward until the bone is reached above the level of the disease. For this purpose the incision already described is continued upward along the outer border of the extensor digitorum communis, so as to open up freely the intermuscular septum between it and the extensor carpi radialis brevior. In the floor of the wound there are exposed, from below upward, the extensor primi internodii pollicis, the extensor ossis metacarpi pollicis, and finally the supinator brevis. The posterior interosseous vessels emerge between the two latter muscles, while the nerve pierces the supinator brevis a little above its lower border. Forceps are applied to the divided branches of the artery, but care is taken not to injure the nerve.

The important part in the after-treatment is to prevent shortening of the radius during its reformation. Should this occur, the hand will become deviated to the radial side. The best way to prevent this deformity is to apply a pistol splint which will maintain the hand in the position of ulnar flexion, or if necessary, extension may be applied to the hand in the same way as after resection of a portion of the humerus.

While one need have no hesitation in performing the operation of subperiosteal resection for tuberculous diaphysitis of the bones of the leg and forearm, and even of the humerus, in the femur the matter is not so simple because of the serious disability which would result if the new formation of bone were not sufficiently perfect to bear the superincumbent weight of the body. There can be no question that when the disease in the shaft is localized and fairly well circumscribed, the gouging operation should be tried, at any rate in the first instance.

CONCLUSIONS

1. Bone and joint tubercle is particularly common in Scotland, especially among the artisan and poorer classes.

2. This prevalence is due partly to the system of living in old and crowded flats, but more especially to the presence of bovine tuberculosis in the dairy cows, to their inadequate inspection, and to the ignorance of the farmers and public generally regarding the transmission of bovine tuberculosis to the human subject.

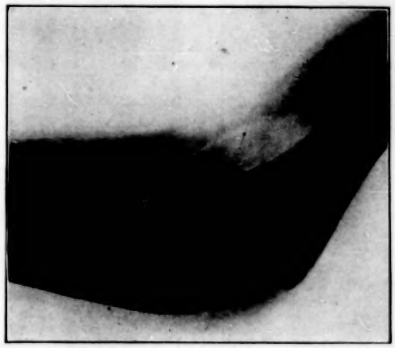

Fig. 9.—Tuberculous focus in upper metaphysis of ulna with secondary invasion of the elbow joint.

3. The chief portals by which the bacilli gain access into the human body are the buccal and pharyngeal tonsils, the lungs and the intestine, the bacilli being carried to the associated lymphatic glands and thence into the blood-stream.

4. The localization of the disease in the bones is accounted for by the distribution of the intra-ossal vessels, and that in children the disease is more frequently met with in the growing ends of the diaphysis (the metaphysis) than in the epiphysis.

5. The joints which are most often and earliest involved secondary to an osseous focus are those which possess small epiphyses, viz., those at the hip and elbow.

6. In the rare instances in which the disease begins in an epiphysis, it does so more especially in those which are relatively large and which begin to ossify early, viz., those at the knee.

7. The reason why primary bone foci are so much more frequently met with at the elbow than at the shoulder or wrist, is that the nutrient arteries of the humerus and bones of the forearm are all directed

toward the elbow, and the same fact probably explains why a tuberculous focus is much more frequently met with in the upper than in the lower metaphysis of the femur.

8. The frequency of tuberculous dactylitis is also accounted for by the blood-supply of the bones.

9. Tuberculous diaphysitis of the long bones proper is probably commoner in children than has hitherto been supposed, and the condition has no doubt often been regarded as syphilitic or as due to a subacute pyogenic infection.

10. A circumscribed focus of tubercle in the metaphysis should, if possible, be removed by operation before the adjacent joint becomes involved; this may be done either by gouging and curetting or by a subperiosteal resection.

11. In the majority of cases tuberculous diaphysitis should be treated by subperiosteal resection rather than by gouging and curetting, except perhaps in the case of the femur.

Fig. 10.—Tuberculous diaphysitis of tibia, child aged 3 years.

Fig. 11.—Illustration from the same case as in Figure 10. Taken two months after resection of upper two-thirds of the tibia. It shows the formation of the new shaft by the periosteum.

12. If the metaphysis as well as more or less of the diaphysis is involved, and the affected portion of bone is divided and wrenched away from the epiphyseal cartilage, the latter does not come away with the diaphysis but always adheres to the epiphysis.

13. If this operation be undertaken before the periosteum has become invaded by the disease, its bone-forming properties are such that it is capable of completely reproducing the portion of bone which has been removed.

14. In the after-treatment it is advisable to apply extension to the leg in order to keep the periosteal tube on the stretch so that shortening and angular deformity may not occur.

15. In order to obtain a stable weight-bearing leg after excision of the head and neck of the femur for tuberculous disease, the leg should be placed in the after-treatment in the abducted position with the trochanter planted firmly into the acetabulum, and the muscles stitched back over it.

16. In excision of the knee for tuberculous disease, nailing of the tibia to the femur greatly facilitates after-treatment and at the same time insures osseous ankylosis in good position, and the same may be said of nailing the foot to the tibia after excision of the ankle.

17. In excising the elbow for tuberculous disease in children, it is often necessary to combine the operation with subperiosteal resection of a considerable portion either of the humerus or of the bones of the forearm.

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THE THREE RULES OF TREATMENT IN ADULT JOINT TUBERCULOSIS *

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If a man has appendicitis he goes to a reputable surgeon, receives an opinion, and has his appendix removed. If he consult a dozen surgeons he will get about the same advice from them all. If he has a tuberculous joint or a joint that is thought to be tuberculous, what a predicament is he in? One surgeon would put him to bed, another would immobilize the joint, another would administer tuberculin, another static electricity, another would open, scrape and pack, another would resect, and another would amputate. Some inject iodoform, some formaldehyd solution, some charcoal, some phenol (carbolic acid), some use passive congestion, some would apply a brace, some plaster of Paris.

This is chaos. It is high time that the treatment of adult joint tuberculosis rested on a more stable foundation than empiricism, and I propose to submit three rules for the treatment, which rest, not alone on clinical experience, but on a laboratory examination of the results of other men's work and of my own, and a study of the patients. My material now consists of about eighty specimens.

The first rule is that the treatment of adult tuberculous joints should almost invariably be radical. Painless and useful function in these joints is more or less of an iridescent dream. While in a few of the milder synovial forms the joints may recover under conservative treatment, this is, in the vast majority of instances, hardly worth trying for more than a few months. If the bone is much damaged and if one is sure of the diagnosis, it is better not to try conservative treatment. The spine offers no field, however, for radical treatment.

This statement will doubtless be challenged. Frequently one reads of brilliant results following some form of conservative treatment. I refuse to accept them for the following reasons: 1. The clinical diagnosis of joint tuberculosis is often an extremely difficult matter. My laboratory examination shows about 33 per cent. of error, and I believe that adult joints cured with good function by conservative means are rarely tuberculous. 2. The treatment in the hands of others does not show the results claimed by its author. 3. Joints supposed to be cured conservatively often flare up after a number of years. On the other hand, a tuberculous joint properly treated radically cannot again break out.

* Read in the Section on Surgery of the American Medical Association, at the Sixty-Second Annual Session, held at Los Angeles, June, 1911.

The second rule is that in operating, our aim should be to deprive the joint of function, and the simplest and best way to deprive a joint of function is by a resection. The reason for the location of tuberculosis in the region of the joints is that there are here two tissues which are vulnerable to the tubercle bacillus, namely, the synovia and the red or lymphoid marrow. The presence of these tissues is dependent on function. If function be removed they disappear. If they disappear the disease dies out. The joint tuberculosis gets well because it has no field for existence. Therefore, the object of the resection is, not to remove all the infected tissue, but simply to destroy function in the joint, and thus to cause the disappearance of the lymphoid marrow and of the synovia.

This rule has two great exceptions. In the joints of the tarsus and carpus, no operation can be done which will cause the necessary change in the structure. Therefore, the only hope will be in a resection wide enough to get out every particle of infected tissue, or in an amputation. Partial operations are worse than useless. The other exception is that if the patient's vitality be very low, an amputation will probably be preferable to a resection.

The third rule is that in all operations on tuberculous joints secondary infection must be avoided at all costs. If drains be used they must soon be removed. Scraping and packing tuberculous joints and abscesses should never be practiced.

The reason for this rule is as follows: Pure tuberculosis is what may be termed a selective disease, affecting only certain kinds of tissues, those containing lymphoid and epithelial cells, for instance. As has been said, in the joints it affects only the red or lymphoid marrow and the synovia. Fibrous connective tissues, ligaments, yellow marrow, muscle, etc., are all immune or practically so. If, however, a secondary infection be added, tissues formerly immune become immediately vulnerable, and instead of a strictly localized tuberculous process there is a wide-spread, infiltrated tuberculous area. The dangers of the disease are increased threefold. If a tuberculous joint be opened and drained, it will almost invariably become secondarily infected. When we attempt to provide, by drainage, for the exit of tuberculous material, we actually provide for the entrance of pus germs.

The reason for all the various theories and differences of opinion on joint tuberculosis is really a lack of knowledge of all its aspects except its cause and its clinical features. We know that tuberculosis exists in certain tissues and does not exist in certain other tissues. We believe that the relation of the lymphocytes to the tubercle bacilli is a phagocytic one, but it must seem strange to us that only in those tissues where the lymphocytes or similar cells are found, as for instance, in the lymphoid marrow, can unmixed tuberculosis exist.

It is almost impossible to explain the occurrence of the disease on this hypothesis, or to explain the rationale of radical or of conservative cure, and until we can explain most of the phenomena of the disease and can base our opinions on something more than clinical experience, we shall with difficulty convince our opponents of the truth of our contentions, for one man's clinical experience has about as much value as another's.

The hypothesis of the pathogenesis of joint tuberculosis which I would submit is as follows: The accepted relation of the lymphocyte (or similar cell) to the tubercle bacillus is at least not an invariable one. Let us assume that the lymphoid cell, instead of being the antagonist of the tubercle bacillus, bears the same relation to it that the red blood-cell bears to the plasmodium of malaria. In other words, the lymphoid cell is not the antagonist of the tubercle bacillus, but its prey.

If this hypothesis is correct, few phenomena of joint tuberculosis remain obscure. The bacilli, floating in the blood, are thrown out into the tissues. Where they find cells suitable for their growth, as in the lymphoid marrow and synovia, they thrive; where they do not find such cells, as in the fatty marrow, in the muscles, or in the fibrous tissues, they die. When the lymphoid marrow and synovia disappear from the region of a joint after a successful aseptic resection, the tubercle bacilli have no soil for their growth. If, however, a secondary infection be added, the resulting suppuration provides the necessary supply of cells for the growth of the tubercle bacilli, and the disease may last indefinitely, even in tissues that previously were immune.

The three rules, then, that I would submit for the treatment of joint tuberculosis in the adult are:

1. Almost invariably the treatment should be radical.
2. Its object should usually be to deprive the joint of function. If this be impossible then the operation must be planned to remove every bit of the diseased tissue at whatever cost.
3. Secondary infection should be avoided at all hazards. If it takes place, vigorous effort should be made to overcome it by cupping, bismuth paste injections, etc., before resorting to operation and afterward.

520 Metropolitan Building.

ABSTRACT OF DISCUSSION

ON PAPERS OF MR. STILES AND DR. ELY

DR. JOHN B. MURPHY, Chicago: The tuberculosis attacks the area that is most active in the process of growth. My patients have been about 90 per cent. adults and 10 per cent. children, which makes an enormous difference in the practical phases of the disease. It gives one an entirely different point of view. Mr. Stiles showed you that the disease began in children almost exclusively in the diaphysis. That is correct for children. In my experience in young children the epiphysis is largely cartilaginous tissue and tuberculosis never primarily attacks cartilage. In adults it rarely ever begins on the shaft side of the epiphyseal line, but practically always in the epiphysis. I am sure Mr. Stiles has had that same experience in adults.

I am going to confine my remarks to the knee-joint. The same changes occur whether it is in the femur or in the tibia. When tuberculosis begins in the shaft side of the epiphyseal line the tendency of the disease is not to involve the joint, and this accounts for the splendid results that Mr. Stiles showed you. On the contrary, when in the adult it begins on the epiphyseal side of the epiphyseal line, the tendency is for the disease to attack the joint later; and that is what occurs in the class of cases referred to by Dr. Ely. So you have two entirely different conditions dependent on the age of the patient.

When there is tuberculosis or any other disease which has destroyed a large portion of the bone, it must be supplanted by some means that will conduct the living osteogenetic elements from one or the other end of the remaining portion of bone or both, if we expect to have in the adult without a periosteum the same reproduction of bone which Mr. Stiles showed you was so beautifully produced in the young from the periosteum.

When there is no periosteum left to reproduce the bone, transplanted bone must be placed in contact with the osteogenetic living elements of the remaining "stumps" and held in contact, if we ever expect to have a reproduction of the bone.

Dr. Ely's proposition is the removal of the tuberculous portion of the joint, and then the production of a bony ankylosis. I would say from my experience that tuberculosis

in a child, involving the joint, does not often begin in the joint; it begins in the bone. In children it begins in two places—in the upper end of the shaft and in the synovial membrane—more frequently, however, in the former, and secondarily attacking the synovial membrane.

I have been treating tuberculosis on the expectant plan and in an ambulatory way, and any ambulatory treatment of joint disease in my opinion is a deception; it deceives the surgeon and gives the patient a bad result.

If we maintain the conformation of the limb during the process of the disease, we finally have an ankylosis; then with the limb in good position we have an opportunity of producing a perfectly movable, useful and painless joint through an arthroplasty.

In the resections of the knee-joint the reason we have had such poor results has been the mobility existing between the ends of the bones immediately after operation. If they could be immobilized perfectly we would not have the failures that we have from excision. Now, by just taking off the surface, getting bony approximation and immobilizing the parts by placing between the bones a plate of magnesium, the ultimate results are excellent. There is perfect primary union, the conformation of the limb is preserved, the patella is retained and a subsequent arthroplasty is done for the establishment of a movable joint.

Dr. Thomas W. Huntington, San Francisco: I shall deal only with tuberculous disease of the hip-joint, or something so closely allied to it and in analogy with it that I have not been able to make a differential diagnosis. I have not been satisfied with the results attained by those having widest jurisdiction; and I am not alone in this.

Waldenstrom of Sweden, who has written one of the most exhaustive monographs on this subject, has said definitely that the disease, as it exists to-day, is being treated badly as a rule. He believes that hip-joint cases have not been subjected to operation sufficiently early, and states that we cannot hope for any improvement under the ritualistic plan now in vogue. He looks forward to the time when the family physician and the average surgeon will refer these cases to one who has the courage and conviction to deal with them along the lines which he regards as rational.

I am absolutely in accord with that position. For the past ten years I have devoted considerable time to this subject. Because of untoward circumstances and paucity of material, I have been unable to demonstrate absolutely the truth of the position which I have taken, but I can show to-day in my own environment several cases of hip-joint disease which have gone on to a perfectly movable joint and a useful life without resection or loss of earning capacity on the part of the individual. Many of us here are possibly familiar with the plan which I have advocated and which has been kindly alluded to by Mr. Stiles.

Briefly, the operation consists of tunneling into the neck of the femur by a subtrochanteric route, cleaning out the neck of the bone with a curet, leaving little except the very outer wall or cortex. The remaining cavity is treated along the lines of ordinary surgical procedure. I do not stand in awe of the bugbear of mixed infection, and treat the bone cavity exactly as I treat a wound in the skin or abdomen. Bismuth paste has, in one instance, served a purpose as a bone filler. By this means, a useful limb and a movable joint have, in every instance, resulted without the wearing of any formidable apparatus, without confining the patient in such a manner that he becomes a "leaner" or dependent through life. With Waldenstrom, I wish to insist that this can only happen when these patients are referred to the surgeon at the proper time for an appropriate, and, what I believe to be, a most rational surgical procedure.

Mr. Harold J. Stiles, Edinburgh, Scotland: There is just one point with regard to Dr. Ely's statement which I cannot quite reconcile with his pathology. He tells us that the tubercle occurs especially in two tissues, namely, the red marrow and the synovial membrane, and that these tissues form a food for the tubercle; they are the tissues they seem to especially enjoy; and yet in the same breath he says that it is not necessary to remove all of the diseased synovial membrane. I think it is necessary. If you leave the disease in the synovial membrane it will progress from the membrane to the ligaments, soften the ligaments, and the disease will continue.

Dr. Murphy always throws great light on any pathologic subject or surgical subject which he discusses, and I am deeply indebted to him for his work on the transplantation of bone; and when I get an advanced case, one in which the periosteum has become involved, then I shall certainly plant the bone in the way that he suggests; and if I do so I feel perfectly sure that I will get good results in cases which would otherwise prove unsatisfactory.

There is an anatomic explanation as to why the disease in the adult is liable to begin in the epiphysis, whereas in the child it is apt to begin at the end of the diaphysis. Luxor showed clearly that in the growing bone the nutrient system of arteries was well developed, and the metaphyseal and epiphyseal arteries were much smaller, whereas in the adult the nutrient system of arteries was the smaller and the metaphyseal and epiphyseal arteries were larger.

Then there is just one other little important anatomic point which is interesting. We are all agreed that tuberculosis in children is much more common in the elbow than in the shoulder or wrist. The reason of that again is an anatomic one, in that the nutrient arteries run toward the elbow, whereas they run away from the shoulder joint and the wrist. So that the embolus is much more likely to follow the course of the blood-stream towards the elbow than towards the other joint, and the reason why tuberculosis is so common in the bones of the hands and feet is that here are the distal arteries in the systemic circulation; and these bacilli if not arrested, ultimately come to the small arteries in the distal bones.

Dr. Leonard W. Ely, Denver: Mr. Stiles' point about leaving the synovial membrane although it is food for the tubercle bacillus goes to the root of the whole matter. Here is the state of affairs: When you destroy function in the joint, the synovia disappears, and there is nothing left but fiorous tissue—there is no more synovia. Whether you take it out or not, it simply disappears, as the red marrow does.

The nutrient system of arteries in connection with bone and joint tuberculosis may be disregarded. Nutrient arteries run everywhere in the body. The increased circulation in a part is no cause for tuberculosis. Lack of anastomosis in the vessels of the brain does not predispose the tissues of the brain to tuberculosis. When you explain a condition in the joint you must have an explanation that will hold elsewhere. All arteries end somewhere, but end arteries are not located in the joints alone, and an anastomosis exists in adult bones. As to the disease beginning in the synovia: I am sure that if Dr. Murphy would take his joints to the laboratory and cut them up and look at them through the microscope, he would find that synovial tuberculosis is very frequent.

Of course he wants a movable joint after tuberculosis; so do I; so does everyone; but he cannot get it in an adult. I have watched these cases under all sorts of treatment for years, by those who believed in conservative treatment, and by those who did not. In the end almost all come to resection. If Dr. Murphy would look at these joints under the microscope and find in them, after many years, cheesy tubercles hidden in the fibrous tissue, he would never open them and attempt to restore motion.

Concerning the operation of tunneling the head of the femur, the tuberculosis exists in the synovia and in the marrow. It is diffuse, not discrete. You cannot pick it out as you would a wen. One cannot tell how far the disease has extended, by the *x*-ray or by any other method; and to attempt to remove that tuberculous tissue with a curet or with any other instrument would be like attempting to clean out cheese from the meshes of a sponge, with a steam shovel. One of the favorite locations of the disease is under the cartilage. This cartilage derives its nutrition from the bone marrow beneath; and when that tissue is disturbed the cartilage is deprived of nutrition, the joint is opened and the disease is diffused.

I am not familiar with Waldenstrom's recent work; but I never saw an authenticated case of tuberculosis in the joint

cured by that tunneling operation nor heard of one. Many cases have been reported, but without proof of the diagnosis. Dr. Huntington's classification of "tuberculosis or something allied to it" is not enough. There is nothing "allied" to tuberculosis. The disease is tuberculosis or it is not tuberculosis. If it is tuberculosis, that operation is irrational and will never be a success.

DR. HARRY M. SHERMAN, San Francisco: Referring to the paper of Mr. Stiles, as regards the location of the infection, for over twenty-five years we have known that in hip-joint tuberculosis the location of the lesion was in the juxta-epiphyseal portion of the diaphysis, that part which is now called the metaphysis; that is, still in the diaphysis. What was true of the hip-joint is probably true of other joints—the lesion occurs in a place where bone is growing. In the hip and elbow, these metaphyseal locations are practically intra-articular. In other joints they are extra-articular. That is, the metaphysis is outside of the point of attachment of the capsule of the joint and the reflexion of the synovial membrane. So that the statement that these conditions are considered nominally epiphyseal I think is a little beside the point. Why the metaphysis should be affected rather than the epiphysis when we are dealing with the bacillus of tuberculosis—which is a non-motile organism, and can only grow where it is carried by the blood or lymph stream—it is impossible to say, unless Dr. Ely's hypothesis should prove to be correct. But, mechanically, it is difficult to see how the bacillus can be carried into a metaphyseal artery and not into an epiphyseal artery. If there is some difference in the receptivity of the tissues in the metaphysis and the epiphysis perhaps an explanation may be found.

Out of several hundred radiographs of people suffering with tuberculosis of the joints, I can produce only a very few which are the duplicates of those which Mr. Stiles showed. In the picture, and as he told it to us, the lesion is not a joint tuberculosis, but it is a lesion in the diaphysis, and its tendency is away from the joint rather than toward it. Hyperplastic periostitis along the diaphysis is very rare in the cases which I have seen, and I have had a radiographic apparatus working on these conditions ever since it became a practical matter. On the contrary, I find that the tendency is to invasion of the joint at a very early time—so early that it is difficult to attack the lesion before the joint has been infected. This has been called especially to my notice in cases of the hip-joint when I have been trying to do a focal operation, which Dr. Ely says is impossible, but which I still think is possible, because it has been done; in these cases in which I thought that I would certainly find an intact synovia and a purely osseous lesion, I have been disappointed in discovering an already infected synovia with the lesion in the bone progressing. The tendency has been for the pathologic process to advance to a synovitis and panarthritis, rather than to progress along the diaphysis, producing a hyperplastic periostitis which Mr. Stiles showed us so beautifully.

Again, it is not at all unlikely that with this eminent authority to back us, we shall be tempted to attack these joints by operative measures rather than to proceed along the old lines of conservatism—conservatism which has given us in not a few instances results which were satisfactory to the patient and to the surgeon, though with a certain loss of time. This is a danger to be guarded against. In this connection it would be most interesting and even imperative to know what is the exact line of cleavage—where the separation between the diaphysis and the epiphyseal cartilage occurs, when the affected diaphysis is pulled out—and whether all of the tuberculous tissue is pulled out with the bone, leaving an intact and unaffected cartilage behind it. Without that knowledge it is not at all unlikely that we surgeons in America, trying to follow in the footsteps of the surgeon from Scotland, may do our patients some harm, because we have not yet learned all of the detail of his technic.

DR. S. J. HUNKIN, San Francisco: I take exception to the remarks of the gentleman from Denver, who would have us believe that all that is necessary to cure tuberculosis in bone is to destroy the function of the joint. Fifteen or twenty years ago I had the unhappiness—due to ignorance—to destroy the function of many tuberculous joints by operations then in vogue. Some of these people are coming to my office from time to time even now with tuberculosis still progressing in the same old areas. I did not get secondary infection in these cases, as some may try to believe, because cultures taken during the time of operation and treatment up to the time of healing showed the wound to be generally sterile. I do not know what kind of tubercle bacteria occur in the high altitudes of Denver. It is possible, of course, that they like peculiar tidbits; that they feed on nothing but red bone marrow and synovial membrane. That is not true, however, of these bacilli in California. They are not so fastidious; they will feed on almost anything in the joint neighborhood; and we find great tumors coming out of the joint, filling up the spaces around the hip-joint, without any breaking down, without any abscess, just simply tuberculomas, and there has been no secondary infection. Certainly tuberculosis in such instances was growing in something beside red bone marrow or synovial membrane. If the purely conservative plan of treatment for tuberculosis of bone is not followed, that is, an exceedingly conservative plan, then in my opinion it is wise to pursue an extremely radical plan, as suggested by Mr. Stiles. There can be no middle ground in this particular. You cannot cure tuberculosis in the joint by "tickling it in the neck," as suggested by my friend from San Francisco, nor by "paring a thin red line," as the gentleman from Denver practices.

ANTITYPHOID VACCINATION *

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The rationality of antityphoid vaccination rests primarily on the fundamental fact that immunity is acquired during an attack of the disease. This immunity is not absolute in every instance. Dreschfeld's figures, referred to by Ricketts and Dick, give 0.7 per cent. recurrences. Recurrences shortly after an attack, however, or within a few years, appear to be rare and these are, on the whole, not so severe as the first attacks. From experimental observation it is known, too, that in animals an active immunity follows the introduction of dead or live typhoid bacilli and that this immunity is associated with and depends on the development of specific antibodies, namely agglutinins, lysins, precipitins and opsonins, in the body of the animal.

On the above facts as a basis Wright in England, in 1896, devised his method of antityphoid vaccination which was used extensively, especially in the South African War. The results were striking, the incidence of the disease being very substantially (50 per cent.) reduced and the mortality, in the cases in which it did occur, was decreased over 50 per cent. Leishman gives the following data: In 6,610 soldiers under similar conditions, who were not vaccinated, there were 187 cases and twenty-six deaths. In 5,473 soldiers vaccinated against typhoid only twenty-one took the disease and two died.

In the United States Army Major Russel,[1] Nelson and Hall,[2] and others, have obtained even more striking results. This is especially true as regards the troops that were mobilized on the Mexican border recently, at which time many thousand soldiers were vaccinated. The fever, so far as available reports indicate, has occurred in only one individual and he had a very mild and short attack. That typhoid fever was present in the camp at the time is known because of its occurrence in the uninoculated. Due allowance should be made, of

* From the Laboratory of St. Luke's Hospital.
1. Boston Med. and Surg. Jour., 1911, clxiv, 1.
2. THE JOURNAL A. M. A., Nov. 25, 1911, p. 1759.

course, for the rigid sanitary measures carried out, which were, without doubt, important factors also in controling the disease.

Wright at first gave only one injection, but later recommended two about ten or twelve days apart. The first dose, he advises, should contain from 750 million to 1 billion and the second from 1,500 million to 2 billion dead bacilli. In the United States Army the vaccine is used in three doses at ten-day intervals, 500 million in the first and 1 billion in the two subsequent doses.

The results obtained, especially in armies, have been so favorable that naturally the work has been extended to other fields, particularly that of hospital service. At St. Luke's Hospital, for many years past, an occasional case of typhoid has developed among the nurses and it was deemed advisable to administer the vaccine to those of the resident staff, laboratory workers and nurses who desired it. Up to the present time it has been given to ninety-one individuals.

The vaccine was prepared in the laboratory of the hospital from four strains of typhoid bacilli recently isolated from the blood of typhoid patients, and which had been carefully identified by proper cultural and agglutination tests. The bacilli were grown for twenty-four hours on plain agar, then suspended in salt solution and the emulsion standardized. The bacilli were killed by heating to 60 C. for one hour, after which proper tests were made to insure sterility.

The first dose contained 500 million dead bacilli and the second, given after ten or twelve days, contained 1 billion. The injections were all made subcutaneously on the arm at a point just over the lateral head of the triceps muscle. The reaction is manifested by local and general phenomena. The local reaction occurs in all cases and begins in from two to four hours. It consists of tenderness, heat, swelling and redness. The intensity varies considerably. In most cases the redness and swelling cover an area around the site of injection several centimeters across. Occasionally it is far more extensive, in a few cases extending from the elbow nearly to the shoulder and completely encircling the arm.

In about one-half the individuals tenderness of the axillary glands was noted. The local changes subside usually after from two to four days, but not infrequently slight tenderness, redness and a little induration persist longer. The general reaction begins usually some hours after the local reaction, reaching its height in from eight to twelve hours. In some individuals it is scarcely noticeable, in others quite severe. In general the reactions after the first dose were more severe, though some exceptions were noted. The symptoms complained of most frequently are a feeling of depression, some headache, hot, dry skin, restlessness, insomnia and, sometimes, chilliness and nausea. The temperature rarely rose over a degree or two. In two instances 102 F. was noted within the first twenty-four hours following the injection, but it was not absolutely certain that there were not some other contributing factors. As a rule, on the following day the individuals again felt quite well, and no serious complications appeared in any instance.

While on the whole the intensity of the reaction, both general and local, was fairly uniform, a few rather striking variations were noted. Some individuals, as above stated, manifested extensive local reaction; others had chills with more or less severe depression and in a few instances there was nausea. Such variations, I believe, are entirely individual phenomena and are probably manifestations of hypersusceptibility caused by unknown factors.

About two weeks following the last dose of vaccine the serum from a number of individuals was tested for the presence of agglutinins. In all a typical Widal reaction was obtained, the agglutination being complete in from thirty to forty-five minutes in dilutions as high as 1 to 120. Higher dilutions were not used. Attention may here be called to the fact that a positive agglutination test in an individual who has received the antityphoid vaccine is of no value whatever. Since the vaccine is now being used more and more it will be important henceforth for clinicians, when utilizing the Widal test in suspected typhoid cases, to inquire whether or not the patient has had, at some previous time, the antityphoid vaccine.

One individual, a nurse on regular duty at the hospital, a few days following the first injection of vaccine developed typhoid fever. Some weeks previously another nurse had acquired the disease in the hospital, and, inasmuch as it was during the typhoid season, it was not surprising that the disease appeared in an individual during the course of the administration of the vaccine. Two weeks before receiving the vaccine she was on service in a ward caring for a number of typhoid patients. She reacted to the vaccine with slight local redness, edema and tenderness and with a temperature twelve hours later of 100 F. There was no tenderness of the axillary glands and the local reaction rapidly subsided. Excepting the temperature there were no general symptoms and, according to her statement, she felt entirely well following the injection. On the seventh day malaise, chills and fever (102.5 F.) appeared and on the next day her temperature was 104 F. A day or two later a blood culture gave a pure growth of typhoid bacilli; the leukocyte count was persistently low. The spleen later was palpable and a few indistinct rose spots appeared. The Widal test was positive, but of course this had no significance. The temperature remained between 102 and 104 F. for ten days, then during the next five days descended to normal where it remained permanently. In every way the course was mild; there was no relapse and the patient was able to leave the hospital twenty-three days after the onset.

It has been shown by Wright that immediately after the injection there occurs a decrease in the amount of antibodies normally present in the body. This phenomenon he called the negative phase and during this period, according to him, the individual is more susceptible to the disease. There follows, after a few days, the so-called positive phase at which time the specific antibodies increase in amount until approximately the tenth day when the maximum is reached. The amount remains about constant for a time and then slowly decreases to the normal, which is reached usually after a period of weeks or months. It should be pointed out that this phenomenon, which may be represented in the form of a curve known as the antibody curve, corresponds in general to the curve obtained during and following an attack of the disease, with the exception that the antibody reaction in the latter case is usually more intense.

The question arises as to whether the occurrence of typhoid fever in the above-mentioned individual following the vaccine is an illustration of increased suscepti-

bility during the negative phase.[3] It is possible that this person was already harboring bacilli and the negative phase was sufficient to permit them to gain the upper hand and precipitate the symptoms. Should this be true it would illustrate Wright's contention that the vaccine should not be given during an epidemic. During the typhoid season a coincidence might so easily occur that one individual case such as this can be of little value for or against the assumption of hypersusceptibility during the negative phase.

Experience has been rather against the idea that hypersusceptibility exists following the injections. Its only support, apparently, is Wright's work years ago in the English army, at which time he gave only one or two very large doses. These large doses could very well have been responsible for such results. The experience in the U. S. Army does not seem to corroborate Wright's contentions, and the report of Cullinan in Dublin (quoted by Major Russel), which bears directly on this point, speaks strongly against it. He inoculated during an epidemic, and of the uninoculated individuals 14.9 per cent. acquired the disease while only 1.36 per cent. of the inoculated were striken.

The fact is significant that following the vaccine the disease in this nurse who acquired typhoid ran a mild course, and in duration was only about one-half the average. This is in accord with the report of a number of cases, which have occurred during or shortly after the inoculation. Richardson and Spooner[4] mention two cases occurring in nurses, one of whom showed symptoms shortly after the first inoculation. The course was very mild, lasting only about two weeks. At the time there was an epidemic among the nurses. The second case appeared in a nurse who was taking care of two very sick typhoid patients. She had had three injections and three days following the last she developed mild symptoms of typhoid. Her temperature never was above 102.5 F. and she made an uninterrupted recovery. These authors[4] believe that there is no substantial basis for the belief in hypersusceptibility during the negative phase. Attention should be called to the fact that they used small doses beginning with 50 million and increasing to 300 or 400 million. It may be questionable whether these doses were large enough, especially in view of the fact that the agglutinins after their inoculations were not high, being only 1 to 50 in 80 per cent. of the cases. Russel reports similar instances in the Army.

It is known that the immunity following the disease exists much longer than the period of time during which the antibodies are found in the blood. This fact has been explained by assuming that the tissues acquire the power during the disease of rapidly reacting to the same infection, should it subsequently be acquired, in such a way that large amounts of antibodies will be quickly produced and will overwhelm the invading organisms before they gain sufficient headway to cause either any symptoms at all or only a mild attack. It is possible, therefore, to understand why the immunity acquired during an attack of the disease may be at least relative during the remainder of life, though probably slowly decreasing in intensity.

This leads to the question of the duration of immunity acquired by the introduction of the dead bacilli into the body. The data on this point obtained by actual observation do not cover a long period of time. Wright states that the immunity lasts about two years. It probably lasts longer. Theoretically one should expect a relative immunity for the remainder of life, even though it might be slight. In order to decide this point careful observations are needed covering a long period of time.

Perhaps a word of warning should be uttered concerning the present method of administration. Thus far, though many individuals have been inoculated, no serious results have been reported. It is a fact, however, that the vaccine has heretofore been given chiefly to young and healthy army men who have passed a thorough physical examination. We should remember that any substance that will, in a healthy individual, cause headache, nausea, insomnia and an increase of temperature of two or sometimes three degrees, etc., as the typhoid vaccine may do in the doses used, must be considered a powerful toxin. Consequently it is reasonable to assume that certain changes such as myocardial degeneration, vascular changes, kidney degenerations, etc., might easily result, though they may be manifested only at a much later period of life. And perhaps the consequences might be much more severe should the vaccine be injected into an individual who was at the time suffering from renal, cardiac or other lesions. At any rate, it would seem inadvisable to use the vaccine previous to a careful physical examination.

I believe it advisable also to modify the administration of the vaccine in such a way as to avoid the occasional rather severe reactions. It would seem reasonable to begin with a small dose, giving about 250 million or even less. Such a dose causes some local reaction, but almost no general reaction. The second dose may then be double the first (500,000,000) and the third 1 billion. If it should prove necessary more doses might be given. It is important to avoid severe reactions for several reasons. If a smaller initial dose is given the local soreness will be less and the general discomfort, headache, depression, etc., will largely be obviated. It would therefore not be necessary for the individual to stop work for a period (twenty-four hours) following the injection of the relatively large doses now given, as it now sometimes is. Should there be any truth in Wright's negative phase theory, a small initial dose would tend to eliminate whatever danger might exist in this respect.

As to the possibilities of antityphoid vaccination it is evident that it will find its greatest usefulness in connection with large gatherings of men like the army, especially under conditions in which the water- and food-supply cannot be carefully supervised; also in connection with institutions of various kinds, colleges and universities and especially hospitals. To those who have any regular association with typhoid patients its administration would seem advisable. This includes nurses, physicians, certain hospital employees, laboratory workers and the like. In cities where an epidemic is raging its wholesale use might be indicated, and where one member of a family has acquired the disease, it might seem rational to vaccinate the entire household.

Finally, it should not be assumed for an instant that, because favorable results have been obtained with antityphoid vaccine, we can be less vigilant in our sanitary measures directed against the spread of this disease.

3. The possibility of acquiring the disease from living bacilli in the vaccine may be mentioned. The vaccine used in this instance after heating had been tested on three successive days just previous to the injection. Several drops of the vaccine (without antiseptic) was introduced into the culture tubes, and in no instance did any bacterial growth appear after incubation. The same supply of vaccine was also tested several days later and found absolutely sterile. Again, this individual was inoculated at the same time and with the same vaccine as about sixty other persons, none of which acquired the disease. Furthermore, it is very doubtful if typhoid fever can be caused by subcutaneous injections of live bacilli.

4. Richardson and Spooner: Boston Med. and Surg. Jour., 1911, clxiv, 8.

THE SYMPTOMATOLOGY AND DIAGNOSIS OF ANGINA PECTORIS

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Angina pectoris is a symptom, or rather a symptom-complex, characterized by paroxysmal attacks of pain, which usually radiate characteristically, and by sudden death, or the fear of death. It appears usually after the age of 40, and occurs more frequently in men than in women.

It may be divided for purposes of description into two forms: an organic angina and a functional angina, or a form with and a form without appreciable organic alteration. The latter has been further divided into neurotic, neurasthenic, reflex, hysterical, toxic and other types, all sometimes called pseudo-angina; but these terms are vague, and, lacking an organic origin so far as is known, may be grouped under the one heading, functional angina. It is apparently agreed now that the term "pseudo-angina" should be dropped, "since the basic features of all forms are the same" (Osler), and as Mackenzie says, why should a heart pain be called a pseudo-angina any more than a stomach pain, pseudo-gastralgia?

The cardinal features of an attack of angina are: pain, which usually radiates; a sense of constriction; and sudden death or the fear of impending death. The attacks are induced ordinarily by extra effort of some sort, mental or physical. Physical exertion is the most frequent exciting cause, and walking rapidly against the wind, especially after meals, will often bring on an attack in one who is susceptible. Worry and anger, coldness and dampness, and distention of the stomach may also incite the attack. Occasionally it is spontaneous, coming on without any apparent reason while the patient is resting quitely in bed or on a couch, but this is more likely to be the case in functional angina of nervous origin, or in the later stages of organic angina.

The onset is, as a rule, exceedingly sudden, the attack coming without warning immediately after exertion; or its approach may be heralded by tingling, numbness or pain in an extremity or in any part of the body.

No symptom of the attack is constant in character. In different individuals and in different attacks in the same individual the symptoms may vary considerably. There is a painless form of angina, "angina sine dolore," first described by Sir William Gairdner, but pain is almost always present in some degree, from a feeling of uneasiness to intense and terrific agony. The pain is usually substernal, a little to the left or the right of the sternum, or rarely behind the apex of the heart. It is usually sharp and agonizing and associated with a sense of constricton which is terrific, vise-like and overpowering. This sense of constriction is said by Mackenzie to be due to powerful contraction of the intercostal muscles, which he speaks of as due to a visceromotor reflex. The pain may radiate over the entire distribution of the brachial plexus, or to some of its individual portions, into the neck and left axilla, as a rule, or into the left shoulder and down the arm to the elbow or the wrist, or to the tip of the little finger, or the little and ring fingers, following the distribution of the ulnar nerve, or even into all the fingers. The pain may radiate to both arms or rarely to the right arm alone. It may radiate to any other portion of the body, to the abdomen or legs, simulating the gastric crisis of tabes or an attack of intermittent claudication, which occurs when the large arteries of the lower extremities are sclerosed. The pain may originate in other parts of the body and gradually approach and persist over the heart. Sometimes there is no radiation, or in the milder attacks the pain is not so severe and there may be only a slight sense of weight or constriction or numbness in the precordial region. The seat of the pain has been located by Henry Head in the right or left auricle, or ventricle, or in the aorta, according to the part of the chest to which it is referred. Various theories to account for the pain have been brought forward, but in the main they may be divided into two classes; one based on ischemia of the cardiac muscle, the other on some inflammatory process of the cardiac plexus of nerves. A reasonable theory that needs further elucidation, however, was brought forward by Otto May, who doubts the mechanical origin of cardiac pain and thinks it due to some chemical change in the myocardium. Yet, whatever the explanation, "pain is the great central fact" and is so severe that the individual is, as a rule, struck dumb and motionless and fears that he may die.

In organic angina the patient usually stands motionless till the attack passes, leaning for support on anything in reach; he may kneel down; rarely does he lie down, though Mackenzie says he may roll on the floor in agony. As a rule, however, the pain is increased by lying down (Huchard).

Consciousness is usually preserved but may be lost for a moment. The expression is anxious, the face pale and drawn, and a cold perspiration breaks out on the forehead. There may be dyspnea or cardiac asthma, but ordinarily the respiration is unaffected during organic angina. Osler says a man may die from angina without any change in his respiratory function other than abrupt cessation. Possibly the angina, the dyspnea and the cardiac asthma are all symptoms absolutely distinct. At any rate, the respiration during an attack of angina may be so irregular and shallow as to cause those present to fear the approach of death. Often the patient is simply holding his breath, not breathing, and under these circumstances the attack frequently passes with a deep inspiration.

The heart action may be disturbed in both organic and functional angina, and cardiac weakness is the rule, especially when there is myocardial insufficiency, though not necessarily in all organic anginas, for the cardiac action and the pulse may be perfectly normal in severe attacks of organic angina.

The pulse may be frequent or infrequent, regular or irregular, and is often unequal, the radial pulse on one side being smaller than on the other, with or without aneurysm of the aorta, and a previous arhythmia may disappear during the attack (Von Neusser).

The blood-pressure is commonly supposed to be increased during the attack, and often is, but this too varies considerably. In twelve cases in which Forschheimer studied the blood-pressure, it was normal in one, low in seven and increased in four. Mackenzie has never found any evidence of vascular spasm, or had any difficulty in getting sphygmographic tracings on account of the smallness of the pulse, yet Theodore Janeway says: "Well-marked hypertension is important evidence in the diagnosis of true angina."

In the cases which I have observed hypertension was the rule, and in one case I have been able to record the pressure at frequent intervals over an extended period preceding, during and following the attacks. In this patient the attacks generally came on with a rapid and

steady rise in the systolic pressure from about 130 to 180, 190 or 200, and then on the administration of amyl nitrite or nitroglycerin as quickly came down with a subsidence of the pain and constriction. Again, in the same patient, there were attacks without any increase in blood-pressure, though the symptoms were not so severe as when there was hypertension. At other times this patient had a systolic pressure or 160 to 180 without experiencing any inconvenience. Yet a simple increase in aortic pressure would not of itself be sufficient to cause an anginal attack, occurring, as it does so often, without pain.

The duration of the attack in organic angina is usually a few seconds or a few minutes, but attacks have been reported of unusual length and severity, which, resulting in death, on autopsy were found to be due to thrombosis of a coronary artery (Gibson, Herrick, Morrison).

Uneasy, painful sensations or sensitiveness of the skin may last some time after the acute spasm has subsided, and the attacks may succeed each other with great rapidity, until an almost permanent status anginosus develops and death occurs in one of the attacks (Osler). The susceptibility to these frequently recurring attacks may be due to a repetition of the cause in the heart itself, or, as explained by Mackenzie, to an irritable focus in the spinal cord, which has been violently stimulated by the visceral shock, so that this portion of the cord may remain for a time in an overexcitable state, setting up further attacks of angina with very little or no provocation. Following several severe attacks in rather quick succession, I have seen the succeeding attacks, extending over a period of some months, gradually diminish in severity and frequency, and I am inclined to accept the theory that there may have been an irritable focus in the cord, which in this instance gradually recovered its tone.

After a severe attack the patient is generally greatly prostrated, requiring a day or so in which to recuperate. In other instances of typical coronary disease — the attacks following exertion—a man may go about his business at once without any particular discomfort, only stopping motionless till the attack passes. Another may have an attack in the morning on walking up hill or against the wind, and may not have another attack all day though continuing to walk and to exert himself, the heart having apparently regained control or tone for the time being.

I have seen one man subject to attacks of angina who, on starting out for a day's hunting, would have an attack before walking one hundred yards and would have to stop and rest, but then he could go on all day tramping across country without further inconvenience.

As time goes on, however, in organic disease the attacks are likely to become more frequent and more severe, the patient finally succumbing in an attack. Death may occur with the first attack, or with the second or in one of a series of rapidly recurring attacks. Sometimes death comes gradually, or the patient may go on for years with coronary angina, apparently none the worse except when the attacks come on, dying eventually of some intercurrent malady. In disease of one coronary only there is of course the possibility of the development of a collateral circulation, and the attacks have been know to disappear with the development of free mitral insufficiency (Byron Bramwell).

The sudden death has been a cause of much speculation, but no satisfactory explanation of its mechanism has been made. Osler says that it is the quickest death we see, and that it must be a vagal death, a sudden inhibition of the respiratory center in the medulla. Huchard tells of a man who literally died standing before he had time to fall, being seen to totter and being caught by a bystander, who discovered him to be already dead. Others fall as if struck by lightning; others die in bed during the night. No doubt many unexplained cases of sudden death may be due to an unrecognized angina.

The diagnosis is not difficult. As a rule it is easily differentiated from other diseases, such as biliary, pancreatic or renal colic, but the diagnosis between organic and functional angina is sometimes quite difficult. The necessity for the differentiation is appreciated when one realizes that organic angina nearly always terminates sooner or later in sudden death, while functional angina terminates nearly always in recovery. Death during an attack of angina does occur without any obvious sign of disease of the heart or blood-vessels having been recognized during life or being found on autopsy, but in such an instance there may have been some unrecognized structural change in the heart or blood-vessels.

It may be that there is no angina without some organic change in the cardiovascular system, and that the functional form is merely a milder form of organic angina. Osler divides angina into three classes or grades: a mildest form, *les formes frustes* of the French; a mild form, or angina minor; and a severe form, or angina major. But in any event two distinct classes, the one dangerous, the other not, have been recognized since the time of Heberden, who first described angina and gave it its name.

The physical characteristics of the attacks in organic and functional angina may closely resemble each other. In functional angina the attacks may be very severe and exactly simulate those in organic angina, but there are certain associated phenomena which aid in the differentiation.

Functional angina occurs more frequently in women, and in earlier life. It may occur at any age. The onset is frequently spontaneous, without exertion or any apparent exciting cause, often recurring at the same time in the day or associated with certain actions, defecation for instance, and having certain nervous or vasomotor symptoms ushering in the attack. There may be a general or local vasoconstriction or vasodilatation; the former with cold hands and feet and cyanosis of the lips and finger nails, the latter with forcible heart action and wide-spread throbbing of the arteries. Numbness, tingling and weakness may be alike in both organic and functional angina, but in functional angina the pain is apt to be less severe, the appearance is agitated and the duration longer. Nothnagel, in speaking of what he calls vasomotor angina, says that the anginal symptoms are of secondary origin, and are brought on by a very general spasm of the arteries. Neurasthenia and hysteria are often associated with the functional form.

In a patient whom I have had under observation and who in the beginning suffered several very severe attacks of angina, since when there have been many attacks of a milder character and gradually diminishing in frequency and severity, cyanosis appeared with the attacks, first in the lips and finger-nails, and spread quickly over the entire face, the neck, the upper part of the chest and down the arms, the left arm more than the right, and persisted for some hours after the acute anginal attack had subsided, disappearing gradually. In these attacks the hands and feet were cold, the nervous shock intense and the prostration extreme. They were sometimes associated

with a strong full pulse and high tension, at other times the pulse was weak and irregular. The respiration was apparently not affected except in the very severe early attacks when there was some dyspnea and the breathing was at times labored, at others shallow. The first attacks were sudden, spontaneous and unassociated with any exertion or effort of any kind, mental or physical, and there was no digestive disturbance. Later there was considerable digestive disturbance, which generally aggravated the attacks.

This patient has never had any physical signs of cardiac or vascular disease. Before the onset of the anginal attacks an oculist found it impossible to fit her with glasses, saying that there was a spasmodic condition of the blood-vessels of the retina, which so affected the eye that glasses satisfactory one day were unsatisfactory and had to be changed the next. This angina was, I believe, functional and of nervous origin, but I cannot explain the connection.

Angina due to tobacco, alcohol, tea, coffee, malaria, influenza and other infectious diseases, the so-called toxic form, is rare, and can be diagnosed usually from the history of the case. Every year several cases due to excessive cigarette smoking are seen in the Emergency Hospital Chest Clinic. The onset in these cases is spontaneous as a rule and the pain not so severe, but distinct. The attacks frequently and usually last several hours and are associated with cardiac dilatation, arhythmia, tachycardia and palpitation.

The diagnosis of organic angina is plain when, given a history of anginal attacks in an elderly individual, there are present also any physical signs of cardiac or arterial disease, especially aortitis or aortic insufficiency, and when there is also a history of syphilis in earlier life; but when there is no evidence of any change in the heart and arteries, one must rely on the history of the case, the character of the attack, the exciting cause, the onset, the duration, the appearance of the patient, the presence or absence of vasomotor symptoms or associated symptoms. Even then there will sometimes be great difficulty in deciding and autopsy sometimes proves an organic angina when there were no physical signs of cardiac or vascular disease, but observation will accomplish a great deal and time proves much.

The Wyoming.

A STUDY OF THE CONVALESCENT CARRIERS OF TYPHOID *

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The reason for the study of this subject is the well-known menace of typhoid carriers to the community. The following observations were made on patients during convalescence, just before discharge from the hospital, to ascertain what proportion were carriers at that time.

In making the investigation, the feces, urine, saliva, and, in male patients, the prostatic fluid, were examined. The examination of the latter fluid was suggested to us by the report of Marchildon,[1] founded on two cases of typhoid prostatitis and seminal vesiculitis at autopsy.

In addition to the routine examination mentioned above, we thought it advisable to study the blood in typhoid convalescents. This study, taking into consideration the opsonic index, Widal reaction, the white blood-cell and differential count, was made in order to determine their relation, if any, to the carrier.

PREVIOUS REPORTS ON CARRIERS

A great deal of attention has been drawn to carriers in recent years from the fact that so many epidemics have been definitely traced to them. They were generally of the food-purveying or food-preparing classes.

Horton Smith, in his Gouldstonian lectures in 1900, was the first to suggest the advisability of studying the excretions of ex-typhoid patients as a possible cause of outbreaks of epidemics. Because of the great suffering of the victims and the many deaths among them, the carrier becomes a terrifying, although an unintentional, enemy of society.

Park,[2] basing his conclusions on the investigation of fifty-two patients examined eight months after recovery, thinks that 2 per cent. of all typhoid patients become chronic carriers.

Frosch[3] gives a tabulation of 6,708 cases, in which 310, or 4.62 per cent., continued to excrete bacilli for over ten weeks after recovery.

Graham Overlander and Dailey[4] found bacilli in the feces of eleven, or 16.9 per cent. of sixty-five patients, ten days previous to their discharge from the hospital.

Semple and Greig found that 11.6 per cent. of eighty-six typhoid convalescents discharged typhoid bacilli in their feces for over six weeks.

Klinger[5] was able to trace to their source 1,397 cases, or 36 per cent. of the entire number of cases investigated. In 1,272 cases the typhoid convalescent carrier was found to be the cause, and in 125 cases, the healthy carrier. Considering all patients as chronic carriers in whom the bacillus had been demonstrated for at least three months, it is found that out of 431 carriers, 211 were temporary and 220 chronic carriers. In thirty of the chronic carriers, cholecystitis was present. The ages of the carriers in the two classes were also markedly different; the temporary carriers were mostly young; the chronic, old or middle-aged. This class also contained many weakly individuals and twenty-five lunatics. Of 222 chronic carriers, thirty continued to pass bacilli for six months, fifty-five for a year, sixty-four for two years and eighty-one for four and one half years. Post-mortem examinations were made on three of ten chronic carriers; the supposition that the gall-bladder was the breeding-place of the bacilli was confirmed.

In 1902, Conradi and Von Drigalski found typhoid bacilli in the stools of persons who had not had the fever, but had been in contact with people who had the disease. Roscoe[7] reports an outbreak of twelve cases in an insane hospital, due to contact with a carrier who had never had typhoid.

Davies[8] found that in five of seven examinations of the feces of a carrier, no bacilli were found, and of these, four were successive from January 20 to March 14,

* From the laboratory of the City Pathologist of St. Louis.
* Read before the Fulton County Medical Society, Atlanta, Ga., Nov. 16, 1911.

1. Marchildon: Am. Jour. Med. Sc., July, 1910; abstr. in THE JOURNAL A. M. A., July 23, 1910, p. 349.
2. Park: THE JOURNAL A. M. A., Sept. 19, 1908, p. 981.
3. Frosch: Klin. Jahrb., Jena, 1908, xix, 537.
4. Overlander, G., and Dailey: Boston Med. and Surg. Jour., Jan. 14, 1909, p. 38.
5. Klinger: An Epidemic in South Germany. Translation and Review by Captain Black, Jour. Roy. Army Med. Corps, January, 1910.
7. Roscoe: Lancet, London, 1909, xvii, 1137.
8. Davies: Proc. Royal Sc. Med., 1908, epidemiologic section, p. 224.

1911, indicating the intermittency of the excretion of typhoid bacilli by carriers.

Kayser[9] reports that in Strasburg, during the years of 1901 to 1905, 13.5 per cent. of all cases of typhoid were traced to six typhoid carriers, all of whom were women and gave histories of having had typhoid from one to twenty-seven years before.

OPSONINS

Gachtgens[10] has found that the opsonic index returns to normal in a few months after typhoid, unless the person becomes a chronic carrier, in which case it remains high. Hamilton,[11] following the suggestion of Gachtgens, tested the opsonic indices of seven carriers having gall-bladder disease, and found high opsonic indices. Stone[12] says: "During convalescence and afterward the opsonic index is relatively high. During the first few weeks of the fever the index is increased to 1.5 to 3.5. There is generally a slight decline during convalescence, but high indices may be obtained during this time. A high index, from 2 to 3, is as a rule persistent for months after an attack."

AGGLUTININS

It is generally understood that during the second or third week of typhoid fever the agglutinins are increased so that, on an average, the serum will agglutinate typhoid bacilli in dilutions of 1 to 50, 1 to 100 or 1 to 200, sometimes as high as 1 to 400. Stone[12] states that after the decline of the disease a rapid decrease of agglutinins ensues, the average being 1 to 60 or 1 to 80, and that for a few months to one year or longer this value remains low at about 1 to 40 or 1 to 60. Leishman and Harrison,[13] quoted by Stone, however, refer to one patient whose serum, six months after recovery, agglutinated the typhoid bacillus in dilutions of 1 to 1,000.

LEUKOCYTES

The leukocytes in typhoid, as a rule, are decreased after the first few days. The leukocytes have been thoroughly studied by O. Nageli. His conclusions, as quoted by Sahli,[14] are as follows:

First stage or ascending fever curve: Usually a neutrophilic leukocytosis which soon diminishes, eosinophils entirely or almost absent. Moderate diminution of lymphocytes.

Second stage: Neutrophils and lymphocytes diminished still farther; lymphocytes may be somewhat increased toward the end of fastigium.

Third stage or remission: The lymphocytes are frequently increased and sometimes decidedly so; the neutrophils are diminished; the eosinophils are beginning to reappear. In adults the lymphocytes may remain few in number.

Fourth stage or descending fever curve: The neutrophils are more diminished. Lymphocytes considerably increased: eosinophils are increased.

After the fever disappears, neutrophils increase, the lymphocytes are very abundant, and the eosinophils increase.

In convalescence after typhoid a high percentage of lymphocytes is thought to exist; the opsonic index and the agglutinating power of the serum vary considerably. This, then, is the question: Do a very large number of lymphocytes in the differential count, a leukopenia or high opsonic index and agglutination on the part of the serum have any relation to the carrier at the time of his discharge from the hospital, or do these depend on the length or severity of the disease or some other factors? This we are trying to determine.

GENERAL SURVEY AND TECHNIC EMPLOYED

In this series of cases we endeavored to examine every excretion and secretion which could be expected to contain typhoid organisms and which, in any way, could be excreted and thus get into the outside world and be a source of infection.

Each patient was examined at least twice, some more frequently, and, although examinations were made in more cases than we present here, we record only the cases that were proved to be typhoid by laboratory methods.

Different mediums were tried out. We were accustomed to the malachite green, Conradi's, von Drigalski's and that of Endo, but were more or less disappointed and dissatisfied with the use of these mediums, as they depend entirely on the color reaction. So finally, our preliminary plating was done on the semisolid Hesse medium as modified by Stokes and Hachtel,[15] which gives good color reaction and the evidence of motility. This worked beautifully, a colony of typhoid bacilli giving a pale pinkish large colony, while the colon was usually small and always a deeper red.

This medium also has its disadvantages. The motile colon bacillus is hard to differentiate by this medium, so further tests have to be carried out. Other confusing organisms are the *Bacillus pyocyaneus*, *Bacillus alkaligenes* and *Bacillus proteus vulgaris*. Of course, all cocci and non-motile bacilli give very small colonies, and the above bacilli, except the *proteus*, give large, rather bluish colonies, instead of the large pinkish ones which the typhoid bacillus exhibits and are consequently largely eliminated by the plating with the semisolid, colored, sugar medium. After studying our tables and results, however, we have concluded that although for urine and prostatic fluids we prefer the semisolid medium, for the examination of feces which contain large numbers of various motile bacilli, we could use a solid medium, such as the Endo, to better advantage. Although, personally, we found that this medium was best adapted for our purposes in the urine, saliva and prostatic fluids, we are free to admit that to make any of the differential mediums useful, one must gain experience in interpreting that particular reaction of the organism studied on the medium employed.

To test out the organism further it was stained by Gram's method and grown in glucose-agar stab, litmus milk, milk, bouillon, potato and for the indol reaction; getting typical characteristics in all of these tests, we finally determined the agglutinability of it by an immune serum typhoid. This, of course, necessitated a large amount of work, taking into consideration the number of examinations made. Occasionally, feces or urine of typhoid patients obtained during the course of the disease, were examined as a control for our methods.

We examined the prostatic secretions of nineteen convalescents; four of the male patients were not examined because bacilli were found in the urine at the time of their release from the hospital. One left the hospital before notifying us and two were under 6 years of age. In one case, we isolated the paratyphoid A from the

9. Kayser, quoted by Park: THE JOURNAL A. M. A., Sept. 19, 1908, p. 981.
10. Gachtgens: Deutsch. med. Wchnschr., 1909, xxxv, 1337.
11. Hamilton: THE JOURNAL A. M. A., Feb. 26, 1910, p. 704.
12. Stone: THE JOURNAL A. M. A., Oct. 16, 1909, p. 1253.
13. Leishman and Harrison, quoted by Stone: THE JOURNAL A. M. A., Oct. 16, 1909, p. 1253.
14. Sahli: Treatise on Diagnostic Methods of Examination, 1906, p. 46.
15. Stokes and Hachtel: Arch. Int. Med., 1910, vi, 121.

prostatic secretion. It is noteworthy also that we had previously isolated the bacillus from the blood (Case 3, Table 1). This patient gave a negative Widal for typhoid bacillus up to the time of his vaccination by the killed typhoid organisms, which his clinician deemed wise to give him because of a prolonged convalescence. After the vaccination the Widal test was positive.

As a harboring place for bacilli, we think the prostate gland deserves consideration. It is in such position and so constituted anatomically as to be a feeder of bacilli to the urine. Some cases of chronic prostatitis might be traced to such organisms of hematogenous origin.

The fact that 20.5 per cent. of the patients examined were carriers does not prove that these people are chronic carriers by any means; but it does prove that a large number of people left this hospital as carriers.

In summing up our results, we feel quite certain that some of the patients were excreting bacilli in their feces, although bacilli were not discovered. We judge this was used in this opsonic determination with unheated serum.

The average length of the disease in the seven carrier cases was seventy days; that in the twenty-seven non-carrier cases was seventy-two days.

The average leukocyte count in the carrier cases was 7,742; in the non-carrier cases, 7,844. The large lymphocytes in the carrier cases averaged 20.2, while those of the non-carrier cases averaged 12.6, or a difference of 7.6 per cent.; while the small lymphocytes in the carrier cases averaged 22.18, and those of the non-carrier cases, 35.1. In the carrier cases three serums would not agglutinate stock culture of typhoid in dilutions of 1 to 50; one was positive in 1 to 400, both to typhoid and to paratyphoid A. Another was positive in 1 to 100 dilution and two in 1 to 50. Six of the twenty-seven non-carrier cases were negative in dilutions of 1 to 50; two were positive in dilutions as high as 1 to 400; eighteen were positive in lower dilutions and one was not tested.

TABLE 1.—CARRIER CASES

Case No.	Sex	Age	Color	Duration of Disease (Days)	Leukocyte Count.	Differential Count						O. I.	Feces	Urine	Saliva	Prostate	Gall-Bladder	Widal of Convalescence	Laboratory Findings Confirmed	Remarks
						P.	S. L.	L. L.	E.	M. C.	T.									
1	M.	22	W.	56	8,600	65.5	12.5	21.5	0*	0	0	8.3	—	+	—	0	..	— 1/50	Widal.	
2	M.	32	W.	51	9,600	45.5	25.5	27.5	0.7	0	0	3.6	—	+	—	0	..	— 1/50	Widal.	
3	M.	17	W.	91	6,000	58.5	22.5	18.5	0	0	0	2.5	—	—	—	+	..	+ 1/400	Blood culture.	Paratyphoid A blood culture. Paratyphoid A prostate.
4	M.	35	W.	45	8,000	53.6	35.0	9.3	2.0	0	0	7.0	—	+	—	0	..	+ 1/100	Blood culture.	
5	M.	33	W.	120	8,000	49.7	31.5	18.5	0	0	0	7.5	—	—	+	—	..	+ 1/50	Blood culture.	Organism found in saliva with mixed bronchial mucus.
6	F.	20	W.	71	6,000	56.8	16.8	25.9	0	0	0	4.3	—	+	—	..	..	— 1/50	Blood culture.	
7	M.	28	W.	60	8,000	61.5	11.5	20.5	3.0	2.5	0	4.3	—	+	—	0	..	+ 1/50	Blood culture.	
		70+		7.742	55.8	22.18	20.2	0.8	0.3	0	5.3	—	—	—	—	—	.....		Averages.	

because the bacilli were isolated but once from the feces (Case 1, Table 3), while we isolated the bacilli from five urines, the prostatic fluid of one patient and the saliva mixed with bronchial mucus of another; also because the blood-findings in several of the negative cases were very similar to those in the cases of patients proved to be carriers.

Therefore we have arrived at the conclusion that the feces contain too many motile organisms to permit the use of the semisolid medium successfully for the detection of typhoid bacilli. When such material is examined, even though diluted, there are always innumerable motile bacilli which tend to fill up the plate with large colonies and the detection of the typhoid bacillus is made much more difficult.

We think our results justify us in suspecting that the opsonic index is high in persons who are carriers when they leave the hospital. The average index of our carriers is 5.5, while of twenty-one others who are not carriers, the average was 1.97. The highest index of the carriers was 8.3, and the lowest 2.5. The highest index of the non-carriers was 8, and the lowest was 0.1. There was only one other up to 5. The other non-carriers were quite low; one laboratory stock culture

GALL-BLADDER AND POST-MORTEM CASES

Post-mortem examinations of four typhoid patients who died in the various stages of the disease were made. All had typhoid bacilli in their gall-bladders (see Cases 2, 3, 4 and 5, Table 3). One cholecystitis patient gave a pure culture of typhoid bacilli, and was found to be a carrier at operation. The bile contained a pure culture of typhoid bacilli. Bacilli had been isolated from the feces previous to the operation. He had had typhoid fever seven years previously. His opsonic index was low, 0.9, but he was suffering, at the time, from peritonitis following the operation. The large mononuclear leukocytes were increased in this case to 23 per cent.; polynuclears were 60, small lymphocytes 16, and transitionals, 1. The leukocyte count varied from 13,000 to 17,000. The Widal reaction was negative in dilutions of 1 to 50 for his own bacilli and for stock cultures. Two blood-cultures were negative for typhoid (see Case 1, Table 3).

It seems to us that all typhoid convalescents should be examined before leaving the hospital, and if found to be carriers, should be asked to return from time to time for reexamination. They should also, in our opinion, be carefully instructed as to how dangerous they are to

people around them if they prepare or dispense food or drinks in any way. As the average man is not a wilful murderer at heart, he would, undoubtedly, be anxious to follow instructions and would be glad to find himself pronounced a non-carrier after three or four negative reports have been made. The last precaution is necessary because of the proved intermittence in the excretion of the bacilli.

The armies of the world, especially those of England and the United States, have proved beyond question the efficacy of vaccination against typhoid and the harmlessness to the individual of the operation. If we profit by the success of our experience of vaccination against small-pox and make typhoid vaccination compulsory also, for the good of the whole people, typhoid fever will be a thing of the past and the typhoid carrier will cease to be a menace in civil life, as he has about ceased to be in army life. Until that time comes, as we firmly believe it will come, we wish here to urge that the carrier question be one that is carefully considered and that examination of out-going patients be a routine procedure, as well as the subject of reexamination; only

TABLE 2.—NON-CARRIER CASES

Case No.	Sex	Age	Color	Duration of Disease (Days)	Leukocyte Count.	Differential Count						O. I.	Feces	Urine	Saliva	Prostate	Gall-Bladder	Widal of Convalescence	Laboratory Diagnosis Confirmed	Remarks
						P.	S. L.	L. L.	E.	M. C.	T.									
1	M.	23	W.	58	9,000	58.8	32.0	4.7	6.5	0	0	2.2	—	—	—	0	—	— 1/50	Blood culture.	
2	M.	46	W.	59	8,800	47.2	47.2	1.5	4.0	0	0	0.1	—	—	—	—	—	+ 1/100	Widal.	
3	M.	22	W.	40	9,000	37.6	57.0	4.0	1.3	0	0	0.37	—	—	—	—	—	+ 1/100	Widal.	
4	M.	34	W.	75	8,800	48.5	45.0	0.75	5.6	0	0	0.65	—	—	—	—	—	+ 1/50	Widal.	
5	M.	18	W.	48	5,200	36.0	25.3	35.5	0.9	2.3	0	2.3	—	—	—	—	—	— 1/50	Blood culture.	
6	F.	18	W.	65	10,000	59.8	16.9	18.9	4.0	0	0	3.6	—	—	—	0	—	+ 1/50	Blood culture.	
7	M.	13	W.	58	6,500	56.0	35.6	7.0	0.9	0	0	2.8	—	—	—	—	—	+ 1/50	Widal.	
8	M.	22	W.	67	3,200	61.4	21.6	16.9	0.9	0	0	0	—	—	—	—	—	+ 1/50	Widal.	
9	M.	5	W.	127	6,000	61.8	12.9	24.7	0	0	0	2.4	—	—	—	0	—	+ 1/200	Widal.	
10	M.	21	W.	78	8,800	41.5	26.5	31.0	1.0	0	0	5.0	—	—	—	0	—	— 1/50	Widal.	
11	F.	35	W.	55	6,800	39.5	40.5	14.5	2.0	0	0	0	—	—	—	0	..	+ 1/200	Widal.	
12	M.	25	W.	59	14,000	58.0	10.0	31.0	1.0	0	0	1.1	—	—	—	—	..	+ 1/100	Widal.	
13	F.	12	W.	49	6,000	32.5	39.3	27.0	1.0	0	0	1.6	—	—	—	0	..	+ 1/50	Widal.	
14	F.	21	W.	49	6,400	54.5	38.9	5.4	0	0	1.2	0.46	—	—	—	0	..	+ 1/200	Widal.	
15	M.	19	W.	81	10,000	54.7	21.0	23.0	1.0	0	0	0.39	—	—	—	—	..	+ 1/50	Widal.	
16	M.	28	W.	35	8,600	67.0	26.0	1.7	5.3	0	0	1.1	—	—	—	—	..	+ 1/400	Blood culture.	Typhoid vaccine during convalescence.
17	M.	13	C.	150	7,000	45.5	38.5	10.0	4.0	1.5	0	1.6	—	—	—	—	..	+ 1/400	Widal.	Typhoid vaccine during convalescence.
18	M.	29	C.	76	4,000	47.5	30.8	16.8	3.5	0	1	2.0	—	—	—	—	..	+ 1/100	Blood culture.	Typhoid vaccine during convalescence.
19	M.	15	C.	84	8,000	67.0	21.0	7.0	5.0	0	0	2.6	—	—	—	—	..	+ 1/100	Blood culture.	Typhoid vaccine during convalescence.
20	M.	21	W.	66	8,000	57.0	32.0	10.0	1.0	0	0	0	—	—	—	—	..	— 1/50	Blood culture.	
21	M.	18	W.	150	8,000	62.8	28.5	8.5	0	0	0	2.0	—	—	—	—	..	+ 1/100	Blood culture.	
22	M.	25	W.	100	8,500	39.0	50.0	10.5	0.5	0	0	0	—	—	—	—	..	0	Blood culture.	
23	M.	25	W.	44	7,600	54.5	31.5	13.5	0	0	0	0	—	—	—	—	..	— 1/50	Blood culture.	
24	M.	13	W.	60	7,200	43.5	42.0	14.5	0	0	0	0.1	—	—	—	—	..	+ 1/50	Blood culture.	
25	M.	41	W.	100	6,400	58.3	35.3	5.6	0.33	0.33	0	8.0	—	—	—	—	..	+ 1/50	Blood culture.	
26	M.	2	W.	50	14,600	48.8	32.5	17.8	0.5	0	0	0.2	—	—	—	—	..	— 1/50	Widal.	
27	F.	25	C.	52	6,000	50.0	35.0	14.66	0.33	0	0	0	..	—	—	0	..	+ 1/150	Widal.	
				72	7,844	49.8	35.1	12.6	1.89	0.16	0.03	1.97	..	..	..	..	..	.....		Averages.

TABLE 3.—GALL-BLADDER AND POST-MORTEM CASES

Case No.	Sex	Age	Color	Duration of Disease (Days)	Leukocyte Count.	Differential Count						O. I.	Feces	Urine	Saliva	Prostate	Gall-Bladder	Widal	Laboratory Diagnosis Confirmed	Remarks
						P.	S. L.	L. L.	E.	M. C.	T.									
1	M.	40	W.	12	13,000 to 17,000	69	16	23	—	—	1	0.9	+	0	0	0	+	Widal negative.	Blood culture negative.	Typhoid seven years previous; cholecystitis on entering hospital; died 36 hours after operation.
2	M.	40	W.	26	—	—	—	—	—	—	—	0	0	0	0	0	+	0	0	
3	M.	17	W.	38	—	—	—	—	—	—	—	0	0	0	0	0	+	Widal positive.	Blood culture negative.	Died on thirty-eighth day, with complication of pneumonia.
4	M.	30	W.	15	—	—	—	—	—	—	—	0	0	0	0	0	+	0	0	Died on fifteenth day, of hemorrhage.
5	F.	18	W.	43	—	—	—	—	—	—	—	0	0	0	0	0	+	0	0	Died on forty-third day, apparently of exhaustion.

in this way shall we be doing our duty in the prophylaxis of typhoid epidemics.

That this may be done thoroughly, we believe that the saliva, urine and feces and, of all male patients, the prostatic secretion should be examined.

CONCLUSIONS

1. A large percentage of typhoid convalescents leave the hospital as carriers.

2. The gall-bladder is the harboring place of the bacilli which are excreted in the feces.

3. The prostate gland is a factor to be considered in the male, as it excretes bacilli into the urine.

4. People may expectorate typhoid bacilli.

5. Hesse's semisolid medium, as modified by Stokes and Hachtel, may be used to advantage for the examination of urine and prostatic secretions.

6. The solid color-reaction mediums are better adapted for stool examinations, because of the large variety of motile organisms contained in the stools.

7. The leukocyte count of carriers is normal, averaging 8,000.

8. The opsonic index and percentage of large mononuclear leukocytes were increased in our series of cases.

9. The agglutination of typhoid bacilli on the part of the serum in convalescents from typhoid or in the chronic carrier bore no relation to the carrier.

We are much indebted to Dr. D. L. Harris, under whose direction and through whose courtesy this work was done. Dr. Harris also suggested the carrying out of the differential leukocyte count during convalescence.

653 Candler Annex.

STREPTOCOCCUS VACCINES IN SCARLET FEVER PROPHYLAXIS *

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Much has been written concerning the cause of scarlet fever during the past two decades and a vast amount of research has been pursued in order to ascertain a possible etiologic agency for the disease.

In spite of the writings and the necessarily preceding researches our knowledge is essentially the same as when the studies were first undertaken. In practically all of the work one organism has sooner or later been encountered by all workers, the streptococcus. A few seem to consider this to be a sufficient cause, but the majority look on it as a secondary infecting organism. More are probably inclined to consider the peculiar bodies described by Mallory and named by him *Cyclaster scarlatinale* to be an adequate explanation of the various phenomena. However this may be, we must decide that at present the cause of the disease is not definitely known.

Recognizing the almost constant association of the streptococcus with scarlet fever, a Russian, Gabritschewsky,[1] conceived the idea of treating the disease as though it were in truth a streptococcus infection. This method as described consists in the administration of broth cultures of streptococci in doses of about 0.5 c.c. previously killed by heat and phenol (carbolic acid). These doses are repeated in about a week. After using the vaccine in about 700 cases he concluded that it has a decided value from a prophylactic standpoint and that the method deserves further study. A number of his fellow countrymen did pursue the matter further and with similar conclusions, but outside of Russia the subject seems to have received scant attention as far as practical investigation is concerned.

Influenced by this article I decided to give to the theory a practical test in actual work. About four years ago the Haynes Memorial Hospital for Contagious Diseases was opened as a department of the Massachusetts Homeopathic Hospital, with accommodation for about 150 beds. Among others, wards were reserved for the exclusive use of scarlet fever patients. These wards have been continuously occupied to a varying degree since, sometimes containing from fifty to seventy-five patients and at others falling as low as ten or fifteen, dependent on the prevalence of the disease in the community.

The addition of the contagious department brought new problems for the training-school, as in this were 110 nurses who had enrolled themselves as pupils without planning for contagious work and often not desiring it. In connection with scarlet fever the problem was only

TABLE SHOWING EFFECT OF STREPTOCOCCUS IMMUNIZATION OF NURSES

Year	No. Non-Immune Nurses	Receiving Vaccine	Not Receiving Vaccine	Contracted Disease				
				Receiving Vaccine		Not Receiving Vaccine		In Favor of Vaccine
				No.	Per Cent	No.	Per Cent.	Per Cent.
1910....	21	10	11	1	10.0	2	18.0	8
1911....	15	11	3*	0	0.0	3	100.0	100
	36	21	14*	1	2.7	5	35.7	31

* Incomplete immunization in one case.

with the smaller number, those who had never previously contracted the disease, as the others were, of course, practically immune. Very little difficulty was encountered in spite of the fact that many of these non-immunes contracted the disease. At the end of two years more than 35 per cent. of such non-immunes had been thus afflicted.

It was then suggested that this Russian idea of immunization be tested and with the hearty cooperation of Dr. Mann, the superintendent, it has been carefully followed for two years. The object of this paper is to give the results. Each year's results will first be given separately and then both will be combined.

In the first place cultures were made from a number of throats of scarlet fever patients and many strains of streptococci were isolated. These were combined in the manufacture of a polyvalent vaccine standardized at five hundred million per cubic centimeter. The project was then explained to all the nurses interested and they were allowed to choose the vaccine treatment or to reject it as they preferred.

In 1910 twenty-one non-immune nurses, those who had never contracted the disease, went on duty in the scarlet fever wards. Of these, ten took the treatment, eleven did not. In 1911, fifteen performed similar duties. Of these, eleven received vaccines and three did not. One received a single dose the day she went on

* After this communication was written, at about Christmas time, one nurse, who had received three inoculations of a stock streptococcus vaccine, made from several strains not coming from scarlet fever cases, contracted a mild case of the disease.

1. Centralbl. f. Bakteriol., 1906, xli, 719.

duty and in twenty-four hours had contracted the disease. As she was not immunized, her case is entirely omitted. The method was as follows:

About two or three weeks before a given nurse was going to the scarlet fever wards, usually while on diphtheria duty, she was given fifty million of the polyvalent streptococcus vaccine. This was usually followed by some local reaction, soreness of the arm, and occasionally by some general manifestations, such as headache or malaise. In about a week, one hundred million were given and a week later two hundred million. The results are shown in the accompanying table:

The vaccinated nurse who did contract the disease came down with an unusually mild attack.

In short, during two years but one case, and that a very light one, has occurred among a number of nurses who have received vaccines, while among a considerably smaller group under identical conditions and environment, five times as many cases have occurred, and those not particularly light.

Of course it would be folly to attempt to draw any conclusions from such a small number of cases. The results are, however, very suggestive and they are reported in the hope that they may help to make, with others yet to come, a series from which definite data may be obtained.

Thanks are here expressed for the very cordial cooperation and suggestions of Dr. W. O. Mann, superintendent of the hospital, Dr. J. A. Haywood and Miss Martin, who in their various departments have made the work possible.

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THE SAND-FLY AND PELLAGRA *

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For more than 200 years the etiology of pellagra has been a subject of serious inquiry. This problem, formerly an Old World question, now concerns us, and it still awaits solution. Though the disease is positively known to have existed in this country for less than thirty years, it is now found in almost one-half the states of the Union, becoming in the South a grave disorder.

Briefly, it may be said that the causation of pellagra is purely conjectural. Since 1776, when the Patriotic Society of Milan offered a prize for the determination of the cause, an immense amount of work has been done by worthy investigators, but as yet its real cause is unknown. We do not know whether the disease is toxico-chemical, toxico-infectious or due to a specific infection by molds, bacteria, or protozoa. The solution of this problem has at various times been proclaimed, but subsequent investigations have failed to furnish corroborative material.

Three theories have been advanced as to the cause of this disease: (1) the zeistic theory based on the work of Ballardini, in 1845, giving corn poison due to the excessive use of corn products as the cause, supplanting the old theory of faulty metabolism; (2) the cotton-seed products poison theory of Mizell, in 1911; and (3) the sand-fly theory of Sambon, dating from 1910. The first two rest on malnutrition, the last on the action of a parasite.

* Presented before the Entomological Branch of the American Association for Advancement of Science, Washington, D. C., Dec. 27, 1911.

Since this paper deals with the parasitic theory, the grounds on which Sambon bases his theory may properly be outlined here:

A. The endemic centers of pellagra in Italy have remained the same since the disease was first described.

B. The season of the recurrence of pellagra coincides with the season of the appearance of the full-fledged sand-fly, even to the extent that if the spring is early or late, the sand-fly is early or late in appearing, and pellagra cases are correspondingly early or late in their appearance.

C. In centers of pellagra infection whole families are attacked at times simultaneously.

D. In non-pellagrous districts the disease never spreads to others with the advent of a pellagrin from a pellagrous district.

E. In the case of a family which has removed from a pellagrous to a non-pellagrous district, the children born in the former district are pellagrins, while the children born subsequent to removal to a non-pellagrous district do not develop the disease.

F. The disease is not hereditary, although infants a few months old may become infected, especially if taken to the fields in pellagrous districts, where their mothers work during the season when sand-flies are in evidence.

G. Pellagra is not contagious, but is transmitted to each individual by an infected sand-fly.[1]

In Kansas, in the latter part of July, 1911, the first authentic cases, those of a mother and child, were diagnosed by Dr. E. E. Liggett of Oswego, the attending physician. Dean Crumbine, of the medical school of the University of Kansas and secretary of the state board of health, expressed an earnest desire to have the presence of the sand-fly ascertained for that locality. Accordingly I began, on August 1, a survey of the region. The streams were high and muddy from recent rains so that adults were first sought. An extended opportunity which I enjoyed for study of this insect some years ago in the Mississippi Valley, between Keokuk and Fort Madison, Iowa, rendered familiar the workings of the adult females on horses, especially young colts, on which after warm rains the attacks were so numerous and severe as to denude the animals' ears and throats, exposing patches of raw flesh.

Accordingly, the first day at Oswego, specimens were taken from the ear of a brood mare. Later, when the local streams had fallen, abundant larvæ and pupæ were found. A small stream which passed within 400 yards of the home of the pellagrins had a large colony attached to the tree roots forming riffles in the water. About a mile farther down the same stream a series of rock riffles were well covered with larvæ and pupæ. Here seemed to be an excellent opportunity for a serious endeavor to apply the Sambon theory.[2]

The lines of investigation which I determined to follow were: transfusions on guinea-pigs and monkeys and transference of flies, exposed to the pellagrins, to monkeys and guinea-pigs. In the experiments with each exposed animal there was a check or an unexposed animal.

The transfusions and inoculations gave no positive results. Temperatures of the guinea-pigs and monkeys were taken twice a day without any appreciable change. As this subject has been covered in a paper by Anderson and Goldberger,[3] 1911, who obtained the same

1. Sand-Fly Transmission of Pellagra, THE JOURNAL A. M. A., Nov. 26, 1910, p. 1808.

2. In the subsequent work we had the hearty cooperation of the attending physician, Dr. E. E. Liggett and Dean Crumbine. I have also had the valuable assistance of W. T. Emery, one of my graduate students.

3. Public Health Rep., 1911, xxvi, 1003-7.

results, as will pass to what we consider the more important phase of the Sambon theory, viz., the rôle of the sand-fly.

His theory is protozoal and from analogy with the etiology of malaria, the parasite of pellagra in all probability would have to pass one stage in the body of its intermediate sand-fly host before it could resume its life in the human body. This hypothesis being true, transfusions obviously would be without results.

Taking up the sand-fly, then, the only species found in Kansas thus far is *Simulium vittatum* as determined by Johannsen. *S. reptans* is the species referred to by Sambon and reported on this continent from Greenland only. *S. vittatum* is distributed in Kansas, as far as our survey has proceeded, along Turkey Creek, a tributary of the Kaw in Wyandotte County, along the Marais-des-Cygnes in Franklin County, along the Neosho and its tributaries in Labette County and along the Arkansas in Sedgwick County. A careful survey of the southwestern part of the state has thus far revealed no breeding-places or adult forms of this insect. The most western point, then, is in Sedgwick County. The survey is not yet complete, but will be continued until the entire state has been covered.

For the location of the pellagrins we have Allen, Chautauqua, Labette, Meade and Montgomery Counties. All cases are in the midst of sand-fly territory, except the Meade County case, and this man, a resident of that region for twenty years, spent the year of 1910 in the South. The Allen and Labette County cases are endemic. None of these patients has ever been out of the state, so it would seem that the cause now exists in the state.

For our experimental work the Oswego pellagrin, a woman aged about 35, now in the second season of the disease, was used, and she very willingly did her part.

In this study some interesting observations were made on the life-history, methods of oviposition, character and number of eggs deposited by each female. In all, 1,282 live sand-flies were used and this phase of the work extended from August 21 to November 4. The plan was to divide the number of flies intended for each experiment into two lots, the one lot to be exposed to the pellagrin and then to the subject of experimentation, and the other exposed to the check.

Ten guinea-pigs and two monkeys were used and the temperatures of all were taken morning and evening daily. The number of live flies exposed to the pellagrin and then to the guinea-pigs was 499, the number of live flies exposed to the pellagrin and then to the monkeys was 197. A part of those exposed to the pellagrin were reserved for fixation and sectional microscopic examination in the laboratory, now, during the winter period. Since only the females bite, the relative number of the sexes is important. In a count of 488 specimens, 219, or 42 per cent., were females.

Earlier in the season the flies did not seem to bite the patient, but beginning with October 12 they attacked her, biting freely, drawing blood perceptibly from the pellagrin's arms. These flies were then divided, part placed in the fly-proof cage with the male monkey; part with the guinea-pigs. Repetitions of the same experiment were made almost daily during the stated period.

November 7 the male monkey began to be less active. On the morning of November 8 he appeared decidedly ill, crouched on the floor of the cage and was both unwilling and unable to ascend to his perch. He remained ill all day, getting worse till late in the afternoon he became flaccid and motionless save for a high rate of respiration, ranging from 45 to 60 per minute. His temperature was 103.6 F., a little above normal. He appeared about the same the next morning, but improved a little during the day and continued the same until November 12, refusing all food, but drinking water freely. He was placed in charge of Dr. Boughton, pathologist, and Dr. Skoog, neurologist of the university. He was chloroformed, autopsied and the brain and spinal cord are now being studied by the nerve specialist.[4]

As far as our information goes this is the first recorded instance of an endeavor to apply the Sambon theory along these lines.

The work of the past summer has served to establish a satisfactory technic and to furnish material for this winter's examination. Arrangements are already perfected for the setting aside of one ward in the Kansas University Medical Hospital, at Rosedale, next season for pellagrous patients, and Turkey Creek, which flows near by, is well stocked with immature stages of the sand-fly. It is our purpose then to use a larger series of experiments dealing especially with rhesus monkeys in greater numbers, in continued endeavor to ascertain the validity of the Sambon parasitic theory of pellagra. When once the susceptibility of the animals under experimentation is determined, it would seem that evidence for or against this theory ought to accrue.

UNEQUAL PUPILS AS AN EARLY SIGN IN PHTHISIS

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CINCINNATI

A pupillary difference as a phenomenon in unilateral pulmonary tuberculosis has been recognized for some time, still we find that, in most text-books and writings on this subject, it receives little or no mention. This is probably due to the fact that this difference is not always present, and its diagnostic significance has not been sufficiently worked out, nevertheless when this sign can be elicited, it carries with it a good deal of importance.

In examining for the pupillary difference the room should be only moderately light or the background of a well-lighted room may be used. Direct daylight or a bright artificial light obscures the difference because of an existing hypertonus of the sphincter pupillæ. The pupils are examined in the ordinary way by covering the eyes with the examiner's hands, thus relaxing all hypertonus and then, in diffused light, quickly watching the reaction. If there is a difference it will be noted that one pupil is dilated more than the other and that it reacts less completely and less sluggishly. In other words, it seems to lag. In a large number of cases it is not necessary to test the reaction of the pupil, but the difference can readily be noted with the eyes at rest, provided again the light be not too strong.

In a large majority of the cases in which the sign occurs, the pupil is wider on the side of the pulmonary involvement, and this led Geza Fodor, who first described this phenomenon, to the belief that the reaction is due to a stimulation of the sympathetic nerve fibers, causing on that side a spastic mydriasis. Nevertheless, in many

4. This monkey was taken from the University Hospital group. It now appears that some eighteen months ago this monkey was exposed to poliomyelitis. While the time is remote, nevertheless, the exposure obviously introduces a complication which will make it unsafe to depend on this instance, unless substantiated by many pure culture corroborations.

cases the opposite is true, namely, that the pupil of the unaffected side is wider, and it is this fact which led many observers to discard the phenomenon as having no definite value. It remained for Leo Wolfer to determine the real cause of the pupillary difference. He came to the conclusion that the widening of the pupil is due to a stimulation of the sympathetic fibers caused by pressure exerted by enlarged bronchial glands of the affected side.

For this reason it is not necessarily observed in the pupil corresponding to where our objective findings lead us to locate pulmonary process, in so far as the glands on this side are not invariably and of necessity sufficiently enlarged to stimulate the corresponding sympathetic fibers.

After observing a large series of cases I have been able to substantiate these latter findings, and I am satisfied that a comparative dilatation of one pupil signifies an enlargement of the bronchial lymph-glands of the corresponding side. As such glandular involvement is usually tuberculous in character and takes place at a time when the lung itself does not as yet show destructive changes, I feel that this sign is most valuable in the early diagnosis of pulmonary tuberculosis. Before drawing a definite conclusion as to the significance of this phenomenon, it is of course necessary to rule out affections of the eye which may cause pupillary differences, as well as certain conditions of the thorax, such as tumor or aneurysm.

Several case reports may serve to show the value of this pupillary difference when observed.

CASE 1.—A man, aged 25, a bank clerk, consulted me for a stomach trouble of long standing, which would clear up at times and then return. While examining the patient I noticed the inequality of his pupils, the right being wider than the left and reacting more sluggishly. In view of the fact that there was a marked tuberculous family history, I made a chest examination but found nothing, nor did the patient have any other subjective symptoms which might indicate a pulmonary trouble. The stomach condition persisted for two months and gradually cleared up after sending him away on his summer vacation with strict injunctions as to rest. He returned to me several months later, greatly worried over the fact that he had had a very slight hemorrhage and for two subsequent days his sputum was tinged with blood. On chest examination I was able to find a very early involvement of the right apex.

CASE 2.—A man, aged 28, with an early tuberculosis involving the left apex has been under my care for several months. He is under tuberculin treatment so I have the opportunity of seeing him twice a week and examining him frequently. This man shows a dilatation of the right pupil—in other words, not on the same side as the lesion. Even though the examination for dulness on either side of the spine gives us rather doubtful results in the adult because of the normal dulness over this area, nevertheless, in so far as the patient was not very muscular, I felt that I was able to elicit a more or less localized area of dulness over the right side. An *x*-ray examination of this case confirmed these findings and showed an involvement of the left apex, together with an enlarged glandular mass about the size of a pigeon's egg at the right hilum, which accounted for the pupillary enlargement.

CASE 3.—A girl of 18 years presented the various subjective tuberculous symptoms, such as decreasing strength, shortness of breath on exertion, subnormal temperature in the morning, together with a rapid pulse, and afternoon rise of temperature. There was a dilatation and sluggishness of the left pupil. The chest examination was at first negative except for increased muscular rigidity over the left apex. About a month later I was able to elicit crepitation over this area. I had the opportunity to have an *x*-ray examination made and it showed a marked infiltration about the left hilum sufficient to cause pressure on the sympathetic of that side.

This phenomenon, if we look for it, can very frequently be found in tuberculosis of the bronchial lymph-glands in children. It forms a valuable point in diagnosis, in that type of the disease in which the onset is insidious, and in which the child has not as yet acquired the characteristic paroxysmal attacks of cough. An interesting case of this kind came under my observation on my service in the children's ward of the Ohio Maternity Hospital.

CASE 4.—A child, 2½ years old, had been exposed before admission to a tuberculous mother. The child passed almost imperceptibly from a condition of health to one of disease. The appetite became poor, the cheeks pale, and there was apparent loss of flesh. Irregular pyrexia pointed to some systemic affection, but examination disclosed nothing. The child began to cough very slightly and a Pirquet skin reaction was markedly positive at the end of twenty-four hours, which at this age meant that we were dealing with an active tuberculosis somewhere in the body. There was a marked dilatation and lagging of the left pupil and I made a diagnosis of tuberculosis of the tracheobronchial and pulmonary lymph-glands. The child was placed out of doors and did fairly well, but later developed a severe ulcerative enteritis, which proved fatal. The autopsy showed, besides the ulcerative condition of the bowel, a marked enlargement of the lymph-glands around the left hilum and bronchus. The lungs were not involved.

These cases serve to illustrate that a pupillary difference which is not caused by a pathologic condition of the eye forms a valuable early sign in phthisis, both in the absence of other signs and symptoms as well as in their presence. It is not necessarily found on the side corresponding to the pulmonary involvement, in so far as it is due to pressure on the sympathetic of enlarged bronchial lymph-glands.

124 Garfield Place.

A CASE OF TETANUS WITH RECOVERY

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History.—Last September I was called in consultation with Dr. J. D. Price, of Wanatah, to see a boy 10 years old suffering with a well-marked case of tetanus. Ten days previously he had stepped on a nail in the cow-shed. The wound had healed, and the incident was forgotten, until brought to mind by the questions of the attending physician.

Treatment.—When I saw the boy, he was having convulsions every few minutes and was in a serious condition. Antitoxin (5,000 units) was administered at once, and a like dose daily during the next few days, with smaller doses when temperature and pulse became normal, which occurred about the tenth day. In all he was given 46,000 units. His improvement was steady and marked after the third day of treatment. Convalescence was interrupted by the development of an abscess in the hip on the side where the infection occurred. Meantime he was greatly emaciated. With evacuation of the abscess his daily improvement was marked, and in two months from the beginning of his illness he was back in school.

Comment.—This case is not remarkable in itself. It is the third consecutive case, however, in which I have observed recovery following the liberal use of antitoxin. In the two preceding cases (one a boy and the other a man, and both severe) much larger total quantities were employed. In the boy, 150,000 units were injected, and in the man 220,000 units. It seems to me possible that in the antitoxin treatment of tetanus we have erred in the matter of dosage. These cases all appeared hopeless, and in at least two I think the quantity of antitoxin administered was in excess of the amount usually employed.

TREATMENT OF PAROXYSMAL TACHYCARDIA

SUPPLEMENTARY NOTE

HERBERT M. RICH, M.D.
DETROIT

Since my last communication on this subject,[1] I have had an interesting experience in another case, and my success in stopping the attack leads me to record it and to state the rationale of the method.

Patient.—Miss C. has had many attacks of paroxysmal tachycardia during the last five years, during which time she has been under my observation. The case has been previously described in detail.[2] The method successfully tried in my other case[3] had been described to her, but she had been unable to influence any one of her infrequent attacks and I had not seen her during an attack in the interval.

Treatment.—January 18, at 4 p. m., the patient came to my office complaining of a rapid heart. It had begun at 8 o'clock in the morning. I counted the apical systoles with a stethoscope and found the rate 220 per minute. A colleague, Dr. F. C. Kidner, was called in and corroborated the count. (The rate has been the same in every attack in which I have seen this patient.) After trying the method described in my last communication several times unsuccessfully, I seated myself in front of the patient. Putting my right hand flat over her heart, and my left on her back directly opposite, I directed her to take a deep breath, close her glottis and fix strongly the walls of her chest. I then squeezed the chest-walls with some force, attempting to exert some pressure on the upper part of the heart. Instantly she expressed relief, and, grasping her wrist, I found the pulse to be 110, whereas fifteen seconds previously it had been 220. After resting a few minutes in my office, she went home on a street car, perfectly relieved.

It seems certain, in this instance, that relief was obtained by direct pressure on the heart itself. If the pathology of the condition is, as Keith found, a fibrosis of the primitive cardiac streak, then the attacks are probably due to an occlusion of one or more blood-vessels with a consequent derangement of the circulation in this highly important tissue.

It seems not improbable that a squeeze of the heart at this time might reopen the occluded vessel or vessels and reestablish the normal circulation with a consequent relief of the dependent phenomena. If this explanation should prove to be the true one, the method would be worth trying in early cases of angina pectoris. The pathology is similar and it seems not unreasonable to believe that an occluded coronary artery might also be opened by squeezing the heart and the anginal attack cut short.

32 Adams Avenue, West.

A CASE OF NITROGLYCERIN POISONING

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I believe that there are many men to whom the idea of nitroglycerin poisoning will be a new one, and to whom chance may in the future bring such cases. I have been unable to find reports of a similar case in the meager literature at my disposal, but I cannot but believe, from the nature of things, that these cases must be common in certain localities under certain conditions.

Patient.—F. F., male, aged 21, worked during the summer of 1910 on a farm. In the latter part of the summer his work consisted of blasting stumps in a clearing. He used a giant blasting-powder of the nitroglycerin variety, and worked at the blasting about two weeks. After about a week he noticed that his head would begin to ache after he had worked for an hour or two, and if he persisted in his work he would become quite ill. His head would ache and throb. He would become dizzy and nauseated, and occasionally he vomited. He ascribed it at first to the heat, and finally gave up the work and came to town, where he worked at odd jobs and went to school. For a number of weeks he experienced no return of the difficulty; but one morning he undertook to carry a pile of ashes out from a cellar, during which labor the throbbing headache with dizziness and nausea returned.

Examination.—He sought advice, and a careful examination of his chest, head and urine was made. The examination yielded no information that we did not already possess, and nothing which gave, at that time, any clue to the difficulty. Incidentally, it was noticed that the patient's hands were moist, and he remarked that the soles and palms perspired under stress of labor or excitement. The symptoms complained of were those of poisoning by some cardiac agent and reminded me strongly of an experience of my own with an overdose of amyl nitrite. At first we assumed that the inhalation of gases from the exploding dynamite had caused the symptoms by reason of any nitrites they might contain; but the fact that he had suffered an attack while not subject to the possibility of inhaling the fumes from the explosive, caused the idea to be abandoned. Further investigation revealed the fact that he had worn cotton flannel gloves during the blasting operations, and that he had worn the identical gloves during his work on the ash pile in the cellar at the time of his last attack.

Course.—In order to fix the responsibility definitely on the gloves, which we assumed to have been impregnated with dynamite, or nitroglycerin from it, it was arranged that he should wear the gloves at definite times and under definite circumstances. These experiments revealed the fact that on wearing the gloves when not exercising or when not in a warm room, the symptoms were absent or very slight; but on exercising, they recurred with severity. In other words, it was found that the degree of perspiration present on the hands while wearing the gloves determined the degree of severity of the symptoms; free perspiration being accompanied after the lapse of a little time, by a very severe distress as before described, which disappeared in an hour or two after the gloves were removed. It was concluded that the case was one of poisoning by nitroglycerin, produced by absorption through the skin of the hands.

This case is unique only for those of us who seldom or never are brought into contact with those who handle explosives.

TWO CASES OF OVULATION AND CHILD-BEARING WITHOUT MENSTRUATION

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Patient.—K. C. H., white, aged 23, of Scotch parentage, well developed, weight, 145 pounds, height, 5 feet 6 inches, married at the age of 13. At that time she weighed 180 pounds. She has had three children, the first being born ten months after marriage. The patient has never had the least show or sign of menstruation, or menstrual molimina, one part of the month being the same as the other in regard to sexual matters. Sexual appetite was normal in early married life, but absent recently.

Family History as Regards Menstruation.—Mother was normal. Of the patient's three sisters, two are normal; the other has been married three times and has had eight children without the least sign of menstruation.

Comment.—I am led to report these two cases because I believe them to be very rare, as in my personal experience, which has been quite extensive as medical examiner for life-insurance companies, having interrogated perhaps tens of thousands of women without having come across a similar case, and in my search of the literature available, I have only been able to find one other case reported.[1]

1. THE JOURNAL A. M. A., Jan. 13, 1912, p. 111.
2. Rich, H. M.: THE JOURNAL A. M. A., June 4, 1910, p. 1861.

1. Hoover, A. R., and Marden, J. K.: Surg., Gynec. and Obst., March, 1911; abstr. in THE JOURNAL, April 8, 1911, p. 1069.

COCAIN IN CHANCROID AND SLUGGISH ULCERS

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In using cocain as a preliminary to cauterization of chancroids I have arrived at the conclusion that the drug is useful aside from its anesthetic properties. By the application of a tablet containing one-fourth to one-half grain of the drug the ulcer within a few minutes is transformed into a vascular, healthy surface from which exudes a bloody serum. The soluble tablet is applied with a small cotton swab, moistened to facilitate the dissolving of the tablet. The drug is "rubbed" into the ulcer lightly with the swab. The application of cocain in this manner once or twice daily is of great service, especially when the sore is inclined to be sluggish. Its use is of necessity restricted to small areas, but is not confined to chancroid. The drug acts in effect by inducing hyperemia. The change in the appearance of the ulcer is really marvelous. The action of the drug in combating infection is quite obvious. The exosmosis is so marked that I question whether cocain might not be safely used on larger surfaces than would at first sight seem wise. The action of cocain on superficial ulcers is a beautiful demonstration of the manner in which the drug favors hemorrhage in operations of the urethra, nose, etc. The rationale of the action of cocain in the manner above suggested obviously is the same as that of the Bier method.

As I have but recently begun the use of cocain in chancroid I am not prepared to give a final conclusion as to its value in expediting healing. From my experience to date, however, I am led to believe that it is a remedy of great value. Carefully used in sluggish ulcers of any kind, the drug should be of great service. Infection cannot long withstand the hyperemic assaults induced by the cocain.

I have found the following formula to be of especial service in the use of the cocain by the patient:

℞

Cocainæ mur.	Gr.xx
Carb. animalis	3i

M. Sig. Apply twice a day. Cleanse ulcer carefully with hydrogen peroxid and dry thoroughly before applying powder.

CEREBROSPINAL MENINGITIS

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The present epidemic of cerebrospinal meningitis in various portions of the state of Texas and the prevailing fear of its contagion by the public demonstrate that the question of prophylaxis is of most vital interest and importance. It is encouraging to those interested in public health work to note the interest that the public is taking in preventive medicine. The profession is consulted daily by the laity about some prophylactic which would ward off the disease.

All epidemics teach the inhabitants of the invaded sections that "prevention is better than cure," and the people of Texas have realized this fact, for wherever a case of meningitis has occurred the health authorities have improved the sanitary conditions of that locality. The late plague infection in San Francisco is responsible for the fact that it is considered to-day to be the cleanest city in the United States.

The preventive measures against cerebrospinal meningitis usually advocated by the profession are: isolation of patients and contacts; prompt report of cases and suspects to the proper health authorities; disinfection of premises previously occupied by the diseased; closing up of places of public gatherings and antiseptic gargles and nasal sprays.

It is to the last measure, the application of antiseptics in any form to the nasopharynx as a preventive in cerebrospinal meningitis, that I take exception. I am of the opinion that these applications used promiscuously, as they are by the public, are worthless, if not directly injurious.

In order to direct a successful and an intelligent campaign against any epidemic it is essential for us to understand precisely the manner in which the disease is transmitted from one individual to another and, in infectious diseases, the method of invasion of the organism. Prior to the demonstration of Lazear and his associates that yellow fever was transmitted by the mosquito, our efforts to eradicate this disease were in vain. We know the exciting cause of cerebrospinal meningitis to be the *Diplococcus intracellularis meningitidis*, and if appears that the primary seat of attack is in the nasopharynx, but the connecting link between the nasopharynx and the spinal canal is still missing and until this is established we are at sea when considering the subject of prophylaxis. The meningococcus has been demonstrated in the secretions from the nasopharynx, both in typical cases of the disease, as well as in persons who developed no symptoms at all.

Advocates of the nasal spray presumably anticipate the destruction of the microorganisms *in situ*. It is, however, obvious that any antiseptic in a solution sufficiently powerful to destroy these germs would be deleterious to the mucous membrane. The nasal chamber with its turbinate bodies and mucous membrane lined with ciliated epithelium is especially adapted to prevent germs from passing into the system, which is demonstrated by finding the tubercle bacillus, pneumococcus, diphtheria bacillus and, as previously stated, the meningococcus in the secretions of apparently healthy individuals. The nasal mucous membrane, therefore, possesses a high degree of phagocytic power.

The frequent spraying and douching of the nose has a tendency to injure this very delicate membrane and to destroy its function, thus defeating the primary object in view. The specialist has long recognized this fact and has discarded the use of the compression tank and pump.

It is an accepted fact that the exciting cause of phthisis is the tubercle bacillus which is taken into the respiratory tract by inhalation through the nose and one is almost constantly exposed to this infection, yet no one prescribes antiseptic nasal sprays for the prevention of tuberculosis; we endeavor to promote the function of the nasal mucous membrane and restore it to its normal condition if diseased.

Let us consider the use and results of the so-called antiseptic spray and douche. Spraying of the nose is accomplished by means of various forms of atomizers; their action is chemical or mechanical. The solutions recommended for this purpose are aqueous, as Dobell's, or oily, as liquid petrolatum, with eucalyptus or menthol. The oily solution is introduced into the nose in the form of a very fine vapor and, therefore, any benefit derived is necessarily chemical in nature, depending on its antiseptic properties. Taking for granted, however, that it is germicidal, we know from experience how difficult it is to reach the posterior portion of the nasal cavity with any form of a spray. The germs which may be present in these parts would, therefore, be beyond the firing line and remain undisturbed.

The aqueous solutions when used in the form of a spray can act but chemically, but if introduced in sufficient quantities or as a douche the chief action is mechanical; the germs may be dislodged and perhaps washed out with the fluid. But what actually occurs in the majority of cases is this: The bacteria are perhaps dislodged; the nasal cavity then contains more or less of the solution and the person invariably attempts to expel it by blowing the nose. Instead of closing one nostril and blowing the other, which is the proper way, the act is performed by closing the mouth and compressing both nostrils simultaneously, using the expanded lungs as a bellows. This forces the air up into the nasopharynx where it is condensed under more or less pressure, the Eustachian tubes open and some of the secretions with the organisms are very liable to be forced into the middle ear and perhaps into the accessory nasal sinuses. Thus the germs instead of being expelled are distributed through the head where they usually find a favorable culture medium for their growth and infection is likely to develop.

If the theory of the nasal douche were efficacious, the postnasal douche would be the proper method of cleansing the nasal chamber and expelling organisms which may be present; a small catheter or the tip of a syringe introduced

through the mouth into the postnasal space and the solution allowed to flow through the cavity forward and out, thus actually washing *out* the nose. This method, of course, is not practical for the general use of the laity except under the direction of a physician.

CONCLUSIONS

Nasal sprays as ordinarily used for prophylaxis against cerebrospinal meningitis are unnecessary because of the obscure etiology of the disease. They do not destroy the germs. It is impossible to reach every portion of the nasal chamber and a normal nasopharynx is usually able to take care of itself. They are injurious from the facts that their use is likely to give the person a sense of false security and he is apt to consider other measures as being of minor importance and that the frequent use of the spray injures the delicate mucous membrane and lowers its vitality. Therefore, let us leave well enough alone as regards the nose.

The use of the spray may be justified or prove of value in but one condition; in those cases in which the patients through fear of contracting the disease have become exceedingly neurasthenic; then the oil spray may be prescribed for its psychologic effect, as its use is practically harmless.

THE RELATION OF RESEARCH TO TEACHING IN MEDICAL SCHOOLS

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Much of the future development of medical education will depend on a proper solution of the problem of the relation of research to teaching. In the course of the last decade our medical schools have made great strides in advance. In many of our best institutions the teaching of the fundamental, more theoretical branches is as good as, if not in some respects better than, in the old centers of medical culture in Europe, and we are just about to apply to our clinics what we have learned in our laboratories. It is at this point that we should pause for a moment and consider seriously in which way our desire to place the teaching in the clinics on the same level with that in the laboratories can best be accomplished.

There are certain points about which there should be general agreement; first of all that nobody can be a good teacher of medicine, surgery or its various branches, any more than of any other branch of the biologic sciences, who is not an investigator and endowed with that natural power of observation and that inborn curiosity in regard to the phenomena which he does observe which necessarily leads to research. This does not, of course, mean inversely that every good investigator is a good teacher. To some extent, at least (the true investigator is born and he cannot be entirely the result of training even from the most ambitious material.

It is only through research that the atmosphere of scientific enthusiasm can be created in which the work of the student prospers. It is also through research only that the necessary bridle is placed on an exuberant scientific imagination, and the great temptation to too rapid logical generalization is happily avoided. Through it one is led to the proper degree of conservatism in juding results, and as a consequence of it one develops that state of simple-mindedness and true humility which we admire so much in all our truly great men.

It also goes without saying that no man, however great, can attempt to do research by proxy, which, however, seems to be a common delusion. The most important part of the work must be done personally, which means that the teacher in medicine and surgery must devote much time to his academic duties; how much exactly, is, to my mind, a matter of less importance. Time and experience only can tell whether it is wise to shut off such men entirely from active practice on the outside; but that they must devote the larger part of their time to teaching and research, if they wish to be effective, nobody will deny.

The question then resolves itself into this: How can we attract the men who have the necessary qualifications to take teaching positions in medicine and surgery in our medical schools?

There is one answer which we can dispose of fairly summarily and this is to better present conditions by offering high salaries to the clinical teachers. The argument has been made that, because a physician or surgeon may earn much money in private practice, therefore the chairs of medicine and surgery must be very highly endowed to attract the best men. The fallacy of this argument is at once apparent, if we look at similar cases which have long been settled. Is not what has been said of medicine and surgery equally true of chemistry and engineering? Industrial chemists and practicing engineers may make, and often do make, vast fortunes, larger by far than even the best practitioners could hope to accumulate, still there is no dearth of professors of chemistry or of engineering. The right man will never be prevented from choosing an academic career by such considerations. He must be paid a good living salary according to his surroundings, but nothing more or less. The salaries paid for professorial positions in general are inadequate, especially in the larger cities, but from $8,000 to $10,000 a year would certainly be ample at the present time.

What the clinical teacher, however, can require and what he must require are facilities for work. He must have the necessary material to work with, the necessary laboratories to work in and the necessary assistance to make his own work effective. If money is to be spent, it is best invested in this direction and it will take much money to provide the professor in the clinical branches with the necessary beds under his absolute control, with the necessary laboratories and their expenses for equipment and supplies and with the necessary assistants. On this account the provision of these necessities is the one object on which those who are in control of our medical institutions should concentrate their efforts. On account of the strong appeal which the development of such clinics would make not only to those who are primarily interested in education or in the development of medical science, but even more to all who are interested in charity, since a proper medical treatment of the poor is perhaps the one form of charity which is free from all objections, the necessary funds should be obtained with comparative ease, if only the crying need for such institutions was well understood by the laity.

On account of the large means, however, which are necessary and on account of the urgent, one may say even vital, need of our medical educational institutions for such well-equipped and properly run clinical services, one is justified in watching with some apprehension certain recent developments which may seriously interfere with this object and withal with the healthy growth of medical thought and knowledge in the United States. I mean the overhasty establishment of special institutes for medical research and of special professorships of research medicine.

One may be surprised at the thought that special institutes for medical research may carry with them a danger to general medical education. What I wish to say does not apply so much to those larger institutes which are independent and endowed liberally, like the Rockefeller Institute in this country, the Pasteur and Jenner institutes in Europes. The dangers there are more evidently dangers to the men within the institute than to those outside. It is true that the men connected with them are relieved of the drudgery of teaching and examinations; they are not interfered with in any way with their scientific aims and aspirations, but they must miss the vitalizing influence of youth, of the constant stream through the laboratories of classes of students with their still undeveloped, potential energies, of students from whom after all, the future investigators recruit themselves. It is true that the younger assistants replace them to a certain extent, but only very imperfectly. These men must lose in course of time somewhat the sense of relation between their own work and the rest of medical knowledge. They must lose in breadth by not being compelled to pay some attention to any part of the field except the part in which they happen to be interested. Marvelous results may follow such intensive cultivation, but there also is, at least, the danger which is common to all types of forced cultivation.

There is no doubt that under certain circumstances and for certain men such institutes are a necessity: the Pasteur, the Jenner, the Rockefeller institutes and others have justified their existence over and over again, but, to my mind, it is the exceptional work which demands them and it is the exceptional character who thrives in such surroundings. At any rate, they should not be multiplied unnecessarily at the expense of funds which might be available for more general purposes.

Such institutes constitute a real menace when they are coupled up with an educational institution, unless they assume an educational function and do their share of teaching as well as research. As a general principle, the research institute has as much the duty to teach as the true teacher has the duty to keep his information alive by research. The separation of research from teaching in an educational institution is fraught with real danger because it takes away from the teacher that which is his just due. How does one imagine that it will be possible to fill the teaching position with the very best man if there is side by side with him another for the express purpose of doing that part of the work which should be nearest his own heart? It is true that experience shows that even under these adverse conditions the "teacher" often does as well if not better than his research fellow, but I am sure the average board of trustees will hardly understand why, after having so splendidly equipped the research department or after having it equipped for them by an endowment, they should do much more for the teacher than to give just what is absolutely necessary for teaching purposes. If the best man must choose under such circumstances he is sure to select the research work and so the student, who should certainly be entitled to instruction by the best man available, loses.

The trouble, of course, in some cases, is that research in the abstract appeals more strongly to those who are willing to give the means for such purposes; still I believe that with proper information such individuals would be perfectly willing to give the money in such a way that it could be used for research without crippling teaching.

If we apply this to the conditions in medicine and surgery it is evident that, far from putting such a discouragement in the way of our future professors of medicine and surgery, we should carefully see to it that whatever means are available for research are at their direct disposal. It is possible by good assistance to relieve a man in many ways from unnecessary drudgery and in this way give him ample time for that most important part in the pursuit of new knowledge in his department, which he must do himself. In fact, when we look at the life-history of our great men, we find that they have found time for such work in spite of almost insurmountable difficulties, in the way of time and equipment, and who will say that the tremendous struggle was not part of their success? Still I firmly believe that unnecessary friction should be avoided, all clerical and administrative work, if necessary, examinations, etc., got out of the road; then it will become apparent that it is not so much teaching as a mass of other much less important detail which has clogged the machinery.

In other words, for our teaching positions in medicine and surgery we must get the best men available, and in order to get them we must carefully guard the positions which are to be filled by them, and see to it that they really become attractive to the best talent.

From this point of view the establishment of chairs of research medicine is an even more serious mistake. Research medicine is no special branch of medical knowledge that is worthy of a representation in a medical faculty. The mere existence of such a chair in a way reflects on the work of the rest of the members of the faculty. But one may say: Your objections are directed against words rather than against facts. The title is merely a misnomer and experimental pathology or pathologic physiology is really what is meant. Even then the experiment remains objectionable because it places something between pathology and medicine which should not be there. There is no doubt that our medical schools will prosper just so much as they will do work in "research medicine," but that this type of work should be intimately connected with the clinics no one will doubt. Investigations of this character are the one thing necessary to rejuvenate our teaching in medicine and surgery. Why increase the existing evils by giving the men in the so-called practical chairs an excuse for not doing what it is plainly their duty to undertake? The only reasonable step to take is to force our laboratories into our old musty clinics. We must get fresh air, a different atmosphere and a truly scientific spirit into them, and the only way to do this is by making residence in them congenial to the true investigator.

I do not wish to be understood as saying that the only qualification which the clinical professor of the future needs is proficiency in laboratory work; far from it. There are only few laboratory workers who possess that additional experience and those additional gifts of talent and character which can rightly be demanded of a leading clinician, but that he should have a fundamental training in the methods of investigation in physiology and pathology seems self-evident. The life-history of all our great clinicians is sufficient warrant for this assertion; and I also believe that another assertion cannot be easily challenged, namely, that the experimental investigation of those physiologic problems which are intimately connected with the manifestations of disease can be best done in laboratories directly connected with the clinics and not on the outside in separate institutions.

I present these views for the consideration of the members of the medical profession at large with the hope that they will take a real interest in the matter, first, because in the long run we shall get those conditions in our medical schools which the consensus of the great body of well-trained physicians demands; and second, because the endowments which are to realize our ideals must come largely through the personal influence of those who in active practice come in contact with wealthy individuals who are anxious to use what they possess for the immediate benefit of their fellow men and for the common welfare of humanity.

Sacramento and Webster Streets.

New and Nonofficial Remedies

THE FOLLOWING ADDITIONAL ARTICLE HAS BEEN ACCEPTED BY THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION. ITS ACCEPTANCE HAS BEEN BASED LARGELY ON EVIDENCE SUPPLIED BY THE MANUFACTURER OR HIS AGENT AND IN PART ON INVESTIGATION MADE BY OR UNDER THE DIRECTION OF THE COUNCIL. CRITICISMS AND CORRECTIONS ARE ASKED FOR TO AID IN THE REVISION OF THE MATTER BEFORE PUBLICATION IN THE BOOK "NEW AND NONOFFICIAL REMEDIES."

THE COUNCIL DESIRES PHYSICIANS TO UNDERSTAND THAT THE ACCEPTANCE OF AN ARTICLE DOES NOT NECESSARILY MEAN A RECOMMENDATION, BUT THAT, SO FAR AS KNOWN, IT COMPLIES WITH THE RULES ADOPTED BY THE COUNCIL.

W. A. PUCKNER, SECRETARY.

SODIUM SUCCINATE, EXSICCATED—**Sodii Succinas Exsiccatus.**—Exsiccated sodium succinate is the disodium salt of succinic acid containing not less than 95 per cent. anhydrous sodium succinate, $NaOOC.CH_2.CH_2.COONa$.

Exsiccated sodium succinate occurs as a white, granular, odorless powder, possessing a characteristic saline taste. It is readily soluble in water, but insoluble in alcohol, ether and chloroform. When heated it chars and burns, leaving a residue which responds to tests for sodium and carbonate.

If 10 c.c. of a 1 per cent. aqueous solution of sodium succinate be treated with 10 c.c. of diluted sulphuric acid no precipitate should form; if this solution be extracted with an equal volume of ether, the ethereal extract on evaporating should leave a white crystalline residue of succinic acid.

If to 10 c.c. of a 1 per cent. aqueous solution of sodium succinate a few drops of ferric chlorid solution be added a voluminous reddish brown precipitate should be formed.

If 10 c.c. of a 1 per cent. aqueous solution of sodium succinate be treated with 1 c.c. of diluted nitric acid, the addition of a few drops of silver nitrate solution should produce not more than a slight opalescence.

If 10 c.c. of a 1 per cent. aqueous solution of sodium succinate be treated with 1 c.c. of diluted hydrochloric acid, the addition of a few drops of barium chlorid solution should produce not more than a faint turbidity within ten minutes.

If 10 c.c. of a 1 per cent. aqueous solution of sodium succinate be acidified with 1 c.c. diluted hydrochloric acid and saturated with hydrogen sulphid no coloration or precipitate should appear.

If about 0.5 gm. sodium succinate be heated with 5 c.c. of sulphuric acid U. S. P. until dissolved, not more than a darkening but no distinct charring should be observed.

If 0.75 to 1.5 gm. exsiccated sodium succinate be dried at 150° C. to 200° C., the loss in weight should indicate the presence of not more than 4.0 per cent. moisture; the dried residue treated as described in U. S. Pharmacopeia VIII for sodium acetate should yield an amount of sodium carbonate equivalent to 99 per cent. anhydrous sodium succinate ($NaOOC.CH_2.CH_2.COONa$). (1 c.c. of half normal sulphuric acid is equivalent to 0.0402 Gm. pure, anhydrous sodium succinate.)

Actions and Uses.—Sodium succinate is a saline cathartic. It has been claimed on not very good evidence that it has an antiseptic action in the biliary tract. It is claimed by some clinicians that sodium succinate is useful in combating infections of the gall-bladder and biliary passages.

Dosage.—0.3 Gm. (5 grains) three or four times a day.

Non-Proprietary Preparations:

Sodium Succinate, Exsiccated, Fairchild.—Manufactured by Fairchild Bros. & Foster, New York. No U. S. patents or trademarks.

Sodium Succinate, Exsiccated, Merck.—Manufactured by Merck & Co., New York. No U. S. patent or trademark

Therapeutics

ANESTHESIA AND ANESTHETICS

(*Concluded from Vol. lvii, page 1997*)

LOCAL ANESTHESIA

The introduction of general anesthesia with nitrous oxid by Wells, in 1884, with ether by Morton, in 1846, and with chloroform by Simpson, in 1847, was an incalculable blessing to patients who had to submit to operations, but this general anesthesia did not satisfy all patients. Some were unwilling to undergo the risk or to incur the discomfort of taking a general anesthetic, in some cases it was distinctly contra-indicated, and there was a considerable and growing demand for some local application which should prevent the patient from feeling pain while he was submitting to incision, the handling of the tissues, and the insertion of sutures.

Probably the first successful local anesthesia was produced by the application of ice, or a mixture of salt and ice, to the site of the incision until the part became frozen and its sensibility thus abolished. This sort of anesthesia was adapted only to the most superficial operations, such as the opening of abscesses, incising felons, operations on ingrowing toe-nails, etc.

The next step in local anesthesia was the freezing with ether of the part to be operated on. The ether was applied in the form of a fine spray by means of an atomizer until the part became frozen so that sensation was abolished. This was less cumbersome than the use of mixtures of ice and salt, and it was capable of more definite limitations to the part where the incision was to be made, and in this respect was superior to freezing by ice; but neither of these methods was entirely satisfactory, because when the congelation passed away and the circulation was restored in the part the patient often suffered more pain than he would have experienced from the cutting operation if the part had not been frozen and if no effort had been made to benumb the sensibility of the part.

A later remedy included in the same category of freezing mixtures is ethyl chlorid. This is dispensed in small glass containers with a small metallic outlet, the opening of which is covered by a stopper held in place by a spring. When this is opened, the glass being held in the hand, the warmth of the hand vaporizes the ethyl chlorid in the bottle so that it emerges from the metallic opening in the form of a fine spray, which, when held several inches away, freezes the part with which it comes in contact. This is easier to handle and more elegant in application than either of the other methods already mentioned, and is considerably employed for slight operations like the opening of abscesses.

Local anesthesia did not attain very marked popularity, however, until Koller, in 1884, demonstrated many of the anesthetic properties of cocain. His first observations were made on the effect of solutions of cocain on the mucous membranes of the eye. These observations were extended to other mucous membranes, and the announcement of them was received by the profession throughout the world with the greatest interest. Many experimenters followed the lead of Koller and extended their experiments in many directions. It was soon found that while solutions of cocain obtunded the sensibility of mucous membranes, they had no effect on the unbroken skin; but injected beneath the skin by means of a hypodermic syringe they produced abolition of sensation.

As the knowledge of the action and effects of cocain increased, it was found that, if used too freely, it often produced alarming symptoms. This was especially the case when the drug was administered hypodermatically. It was then soon discovered that if the circulation of the part to be operated on was brought to a standstill by the application of bands, applied for instance around the limbs, if that happened to be the seat of operation, a smaller quantity of cocain was necessary to bring about anesthesia, the anesthesia continued longer, and if the circulation was then restored gradually, the effect of the drug on the entire body was less likely to produce unpleasant symptoms.

At first the strength of cocain usually employed was a 4 per cent. solution in distilled water. Later, it was found that a 2 per cent. solution was effective, and still later solutions of less than 1 per cent. were found to act satisfactorily.

Still further observations with cocain and other local anesthetics led to the conclusion that often the sensibility of the part might be sufficiently benumbed by the hypodermatic injection into the tissues of sterile water. The anesthetic effect of these injections was believed to be due to the pressure on the terminations and trunks of the nerves. S. Gant, of New York, has, during the last ten years, advocated this means of producing anesthesia and has employed it especially in surgery about the rectum. He maintains that the water should be injected into the lower layers of the skin, and that it is only when the skin becomes pale and apparently edematous that the most efficient anesthesia is secured.

On account of the unpleasant effects sometimes witnessed after the hypodermic injection of solutions of cocain, other drugs have been sought which might replace cocain. Among the earliest substitutes proposed were two preparations of eucain, distinguished as alpha- and beta-eucain. It was soon determined that the latter of these was the one best fitted for use in producing local anesthesia.

In 1905, novocain was discovered. It has been found to possess some advantages over cocain. It is extremely soluble in an equal amount of water. It can be sterilized by boiling without undergoing change. Cocain, on the other hand, is liable to be disintegrated if it is boiled. Novocain does not injure the tissues, does not interfere with the healing of wounds after operation, and is estimated to be from one-sixth to one-seventh as toxic as cocain. It may be used in distilled water or in a physiologic salt solution, and it may be combined with a small amount of the vasoconstricting principle of the suprarenal glands, viz., epinephrin (adrenalin, suprarenalin, etc.). This combination with adrenalin chlorid, by contracting the vessels and lessening the rapidity of the circulation, intensifies the action of the drug so that much less is required than when the adrenalin is not used with it. The drug may be used in strength of one-half of 1 per cent. solution. On mucous membranes its action is inferior to that of cocain.

In 1907, a mixture of quinin and urea hydrochlorid began to be used as a local anesthetic. This was at first used in 1 per cent. solution, but it was found that this produced an exudate of fibrin which interfered with healing, so that later weaker solutions were used, and it was finally determined that 0.25 per cent. solution was ordinarily sufficient to produce local anesthesia. This produces a more protracted anesthesia than the other drugs mentioned, often lasting for several days. It is said to have no toxic effect. The drug may be dissolved in water or in physiologic (0.7 to 0.9 per cent.) salt solution.

A large variety of operations may be done under local anesthesia. We have already spoken of operations on the rectum in which sterile water anesthesia has been extensively employed. Anesthesia by means of quinin and urea hydrochlorid has been used in operations on the tonsils with considerable advantage because it not only abolishes the pain, but also by the exudate of fibrin diminishes the tendency to hemorrhage. Local anesthesia has been used especially in operations for hernia, on the genito-urinary organs, exploratory laparotomy, abscesses of the vermiform appendix and of the gall-bladder.

PRESCRIPTIONS

The following prescriptions, which have been taken from various sources, may be of interest:

GASTRIC FERMENTATION

℞	Gm.		
Sodii salicylatis	6		ʒiss
Bismuthi subnitratis	4	or	ʒi
Pulv. sacchari	2		gr.xxx

M. Fac pulveres xxx.
Sig.: One after each meal.

HYPERACIDITY

℞	Gm.		
Prepared chalk	5		gr.lxxv
Magnesia	2	or	gr.xxx
Bismuth subnitrate	0.5		gr.viii

M. Fac pulv.
To be taken at one time. (*Bull. Gén. de thérap.*)

VERRUCÆ

℞	Gm. or c.c.		
Acidi salicylici	1		gr.xv
Alcoholis	1		♏xv
Etheris	2.5	or	fl.ʒss
Collodii	5		fl.ʒi

M. Sig.: Apply one drop once daily.

℞	Gm. or c.c.		
Acidi salicylici	1		gr.xv
Acidi lactici	1	or	♏xv
Collodii	ad 10	ad	fl.ʒi

M. Sig.: For external use.

℞	Gm. or c.c.		
Resorcinolis	10-20		ʒiss-ʒv
Glycerini		or	
Petrolati	āā 25	āā	ʒi

M. Ft. pasta. (*Merck's Archives.*)

PSORIASIS AND CHRONIC ECZMA

℞	Gm.		
Salicylic acid	6		gr.x
Chrysarobin	1.3		gr.xx
Green soap	1.6	or	
Lanolin	1.6		gr.xxv

To be applied every morning. (*Tribune Médicale.*)

CHILBLAIN

℞	Gm. or c.c.		
Ichthyolis	1		fl.ʒss
Resorcinolis	1		gr.xxx
Acidi tannici	1	or	gr.xxx
Aquæ dest.	50		fl.ʒiii

M. Sig.: Apply at night.

℞	Gm. or c.c.		
Camphoræ	0.5		gr.viii
Ceræ albæ	20		ʒv
Olei lini	40	or	fl.ʒi ʒii
Balsami peruviani	0.75		fl.ʒiss

M. F. ung.

℞	Gm. or c.c.		
Iodi (vel. ichthyolis)	0.2		gr.v
Collodii	20	or	fl.ʒi

M. Sig.: Apply once daily.

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[For other information see second page following reading matter]

SATURDAY, FEBRUARY 24, 1912

THE SUSCEPTIBILITY TO INFECTION IN DIABETES

That there is a lowered resistance to certain forms of infection in diabetes is not questioned. The susceptibility is shown in various ways: Pulmonary tuberculosis runs a rapid and unfavorable course; there is a pronounced tendency to furunculosis and to other forms of suppurative infection, notably phlegmons and carbuncles, which often become complicated with gangrenous processes; gangrene of the lung is a relatively frequent complication of pulmonary infection in diabetes; and finally, the gangrene of the extremities in diabetes may be regarded as a result, at least in part, of lessened resistance to infectious and toxic agents.

The exact cause of this definite diminution in resistance to infection has not been determined. The view has been expressed that the lowered resistance may be due to the abnormally high sugar content of the blood, which might favor the growth of various bacteria or possibly neutralize the bactericidal and other anti-infectious powers of the blood. There is no experimental evidence in favor of the view that increasing the amount of sugar in the blood within reasonable limits produces either one of these effects. Thus Handmann[1] finds that the addition of glucose to the blood to the extent of 0.5 per cent. to 1 per cent. does not render it a better culture medium for staphylococci than normal blood; furthermore, that the addition of sugar to the blood does not diminish its bactericidal power for staphylococci, nor does it reduce the opsonic power of the serum with reference to this coccus. It may be noted, however, that Sweet in pancreatectomized dogs found that the serum in the later stages loses its bactericidal power especially with reference to colon, typhoid and dysentery bacilli, and also to a large extent, its hemolytic power. Furthermore, Da Costa and Beardsley observed a distinct diminution in the opsonic power of the serum in diabetics for streptococci, staphylococci and tubercle bacilli. They did not, however, determine whether this diminution in opsonic power was due to a diminution in the thermostabile opsonic element or in the thermolabile element or complement; neither did they make repeated observations on the same patients over long periods of time so as to determine what relations, if any, exist between the changes in the opsonic power of the serum and the occurrence of complications due to the usual diabetic infections.

It has been suggested that diminished alkalinity of the blood in diabetes reduces the anti-infectious power of the blood, but this possibility has not been investigated with sufficient thoroughness to develop any definite facts. It has also been urged that there is no change in the general anti-infectious powers of the blood and other fluids in diabetics, but rather a local loss of resistance concerning the exact nature of which no explanation at all has been advanced. The latter view is based largely on the fact that diabetic patients do not seem to be much more liable to general infections and to miliary tuberculosis than other individuals. It may be pointed out, however, that the observation by Sweet that the serum of pancreatectomized dogs loses its bactericidal power and the observation by Da Costa and Beardsley of the diminution in opsonic power of the serum of diabetics point distinctly to general diminution in the anti-infectious powers in diabetes; hence further and more comprehensive investigations are indicated along these lines and especially, it would seem, with reference to the complement content of the blood in the course of diabetes and to the phagocytic and other powers of the leukocytes. The investigations to the results of which reference has been made clearly are not sufficiently comprehensive and thorough to go to the bottom of the matter.

1. Handmann: Deutsch. Arch. f. klin. Med., 1911, cii, 1.

BODY CELLS AND FOOD SUBSTANCES

"The cells of our body never learn what the character of the food which we eat really is." With this sentence, delivered at a recent meeting of Swiss men of science, Professor Emil Abderhalden[1] has concisely defined a modern point of view on nutrition which is rapidly becoming prominent. Before they leave the alimentary tract the foodstuffs which we eat are disintegrated into common fragments that serve as the real nutrients of the organism. Complex carbohydrates are resolved into indifferent sugar molecules like those of glucose; fats are split into glycerol and fatty acids; proteins yield an aggregation of characteristic amino-acids. Indeed, the main function of digestion is to put these comparatively simple "building-stones" at the disposal of the internal tissue cells so that they can select, synthesize or further rearrange them as the special functions require. Whether it is the proteins of meat or of cereals that we ingest is, after all, largely a matter of indifference to the organism; for they all furnish similar digestion fragments, so long as the alimentary processes perform their duty. It is not meat or wheat, but amino-acids that are offered for nutritive appropriation. Quoting Abderhalden again: "The gastro-intestinal canal with its digestive ferments

1. Neuere Anschauungen über den Bau und den Stoffwechsel der Zelle, Berlin, 1911, Julius Springer.

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forms a mighty barrier against the outer world. That which is distinctly foreign cannot penetrate into our bodies."

If this conception is correct, namely, that our metabolic activities are really carried out at the expense of comparatively few definite, related and unvarying disintegration fragments of the widely divergent foodstuffs, it ought to be quite possible to fulfil the nutritive needs of the organism with mixtures of these fragments supplied in place of ordinary highly complex food. The experimental evidence that this can be done is rapidly accumulating. Animals have been maintained in nutritive equilibrium for considerable periods when fed on mixtures of predigested foodstuffs.[2] Even more suggestive, however, is a very recent study of the metabolism of growing animals fed with meat or the products of the complete digestion of meat respectively.[3] The dogs showed not only maintenance, but typical growth as well, on the products which were offered in the form of digestion fragments. There is a tendency for the occasional "escape" of some of the latter unchanged in the urine; but this "alimentary aminosuria" is not widely different from the explicable alimentary glycosuria which often follows the administration of undue amounts of sugars.

These newer facts of nutrition help us to understand why substances not widely removed in character from those which serve as foods may nevertheless awaken such marked reactions in the organism when they are introduced unchanged directly into the circulation. To the cells these complexes in their undigested form appear as objectionable foreigners; and the untoward effects which we often perceive are the outcome of the struggle to master or utilize a stranger to the living protoplasm.

SPICES AS PRESERVATIVES

The controversy in regard to the use of chemical preservatives may serve to remind us of the little-valued properties of some of the familiar food condiments. It is a matter of common knowledge that fruits and vegetables prepared with the addition of vinegar and spices keep far better than do those put up alone. One need merely recall the well-flavored home-made catsups and pickles. But something more than the "impression" of success is necessary to convince the up-to-date food-consumer. He has been trained to demand exact scientific evidence for the validity of the most hallowed traditions of the culinary art. It is interesting—comforting, we are inclined to add—to find available data on some of these points at the present moment.[1]

Just what condiments have value as food preservatives has not been conclusively determined. According to the observations of Hoffmann and Evans on apple-sauce (which they used as material for study), ginger, black pepper and cayenne pepper do not prevent the growth of microorganisms; whereas cinnamon, cloves and mustard are valuable preservatives, and nutmeg and allspice delay growth. Cinnamon and mustard are particularly valuable, for they are palatable even when used in proportions that prevent all growth.

The active antiseptic constituents of mustard, cinnamon and cloves are their aromatic or essential oils. Cinnamon, for example, yields cinnamic aldehyd, which appears to possess a preservative action superior to that of benzoic acid, and aids materially in preventing the spoiling of foods to which the condiment is added. In view of these experiments it seems rational to urge the more liberal use of the delicious cinnamon and cloves in place of such ineffective spices as pepper and ginger. The latter are commonly irritating to the mucous membranes; and now that we know condiments which quite surpass them as preservatives, the use of the irritating type in preserved foods may appropriately be restricted to the purposes of flavor alone. As Hoffmann and Evans remark, it is a "lucky coincidence" that some of the most attractive flavoring spices also help to keep the food from spoiling.

THE RELATION OF RICE TO CERTAIN DISEASES

Enough evidence has been gathered in very recent years to make it clear that at least one of a series of diseases which occur in more or less epidemic form is not infectious. Among the group including scurvy, pellagra and beriberi, the close relation of which to the food supply has long been appreciated, the etiology of beriberi has become sufficiently elucidated to point the way to effective curative as well as prophylactic measures which have already been successfully tested. Since Eykman pointed out that beriberi is not attributable to rice in general, but that certain kinds of rice or better rice prepared in certain ways are more liable to produce the disease, the progress in the effective investigation of the problem has been rapid. These advances have further been greatly facilitated by the finding that it is possible to induce in birds fed on white or polished rice a disease characterized by a degeneration of the peripheral nerves (polyneuritis gallinarum) and resembling beriberi in several respects. Furthermore it is interesting to note that the same changes in diet which either avoid or cure beriberi in man act in a similar manner in respect to the polyneuritis of the fowl. Here once more animal experimentation has become linked with the beneficent art of healing.

The story of the successive steps which have led to an effective mode of eradicating beriberi would make an interesting chapter. We cannot give the details here;[1]

2. Rona: Oppenheimer's Handbuch der Biochemie, 1910-11, iv, 540.

3. Buglia: Unters. über die biologische Bedeutung und den Metabolismus der Eiweissstoffe, Ztschr. f. Biologie, 1911, lvii, 365.

1. Hoffmann and Evans: The Preservative Action of Spices, Jour. Home Economics, 1911, iii, 452; Jour. Industrial and Engineer. Chem., November, 1911, p. 835.

1. Interesting facts may be gathered from the following papers: Aron: Phosphorus Starvation with Special Reference to Beriberi, Philippine Jour. Sc., (B.), 1910, v, 81; Heiser: Practical Experiences with Beriberi and Unpolished Rice, ibid., 1911, vi, 1237.

but it is established that the same kind of rice which causes beriberi, if the diet of the people is based almost exclusively on this foodstuff, is without any ill effect if a sufficient amount of other things such as fresh meat and vegetables are taken with it. The additional curious fact is that the "polishing" of the rice, i. e., the removal of the outer layers by the milling processes, changes a harmless foodstuff into a harmful one. Obviously the cortical layer or pericarp of the grain or more probably the discarded embryo contains something essential for nutritive equilibrium.

An early suggestion was that the bran furnished an antidote to some toxic substance in the polished or white rice; but it is far more reasonable to assume that by the milling or preparation of the rice for food, constituents of importance are taken away or changed so that they no longer serve their purposes. The marked difference in the composition of the harmless undermilled rice and the harmful polished rice is shown in the low phosphorus and potassium content of the latter.[2] These elements are concentrated, so to speak, in the outer layers or bran, so that an analysis of rice with reference to them will indicate to what extent the decortication has been carried out in milling. In the East these analytic facts have become a good guide in the selection of a beriberi-preventing rice; and though no absolute standard has been adopted, rice is regarded as unsafe if it indicates a content of less than 0.35 per cent. phosphorus pentoxid.

The practical experiences with beriberi and unpolished rice in the Philippines, as they have been reported by the director of public health, Professor Victor G. Heiser, leave little doubt that medical science has placed a "weapon in the hands of prophylactic medicine for the eradication of another of the world's serious and costly diseases." Henceforth, in addition to spreading the gospel of prevention and promoting a campaign of education in places where traditions are difficult to eradicate, the physiologic and chemical intricacies of the problem must be further unraveled. Rice-polishings contain a substance which cures the polyneuritis produced in birds by feeding on white rice. Is it the lack of phosphorus compounds or potassium salts *per se* which leads to the degeneration of the nerves, or are these elements merely an index of some accompanying compound? It is true, according to Chamberlain, Bloombergh and Kilbourne, that in neuritis-producing rice and in beriberi-producing dietaries both phosphorus and potassium are remarkably reduced in amount, the latter in greater degree than the former. Despite the earlier promises of success with certain organic phosphorus compounds like phytin, however, it appears that the polyneuritis of fowls is not prevented by adding to a diet of polished rice various salts of phosphoric acid or of potassium. A complicating factor further arises from the fact that inanition may lead to symptoms of multiple neuritis or increase the susceptibility to it. Chamberlain and Vedder[3] have already tentatively established the fact that the polyneuritis of fowls may be prevented by means of an extract of rice-polishings containing only those substances soluble in water and alcohol. The neuritis is probably not due to lack of phosphorus compounds in the diet, as has been claimed. The neuritis-preventing substance is capable of dialysis and thus colloids are excluded from consideration.

Close on this announcement from the U. S. Army Board for Study of Tropical Diseases has followed the report of Dr. Casimir Funk of the Lister Institute in London.[4] A careful chemical search for the effective agent shows that it is present in minute amounts only, probably not more than 0.1 gram per kilo of rice. "The substance which is absent in polished rice and is contained in rice-polishings is an organic base which is completely precipitated by phosphotungstic acid and by silver nitrate and baryta. The curative dose of the active substance is small; a quantity of substance which contains 4 milligrams of nitrogen cured pigeons." If further investigation substantiates these claims it will afford another evidence of the profound importance of the hitherto underestimated "accessory" components of our diet, even though they are present in what may be termed minimal amounts.

2. Chamberlain, Bloombergh and Kilbourne: Rice Diet, Philippine Jour. Sc., (B), 1911, vi, 179.

3. Chamberlain and Vedder: Etiology of Beriberi, Philippine Jour. Sc., (B), 1911, vi, 251.

4. Funk: The Chemical Nature of the Substance Which Cures Polyneuritis in Birds Induced by a Diet of Polished Rice, Jour. Physiol., 1911, xliii, 395.

THE IMPROVEMENT OF OBSTETRIC TEACHING

In a recent article Williams[5] forcibly calls attention to the deplorable state of obstetric teaching in our medical schools. The lesson to be drawn from this condition of affairs is that obstetric teaching must be made more practical. He outlines the essentials for the improvement in this regard, but does not emphasize sufficiently, perhaps, one important feature which may be commented on here.

In the practice of medicine, obstetrics has heretofore occupied a position of subordinate importance, and yet in the light of modern scientific medicine, childbirth should be regarded as of equal importance with the most vital operation in surgery. Consequently it should be treated in all respects with the same care and asepsis and with the same attention to perfect technic. Every case of labor presents possibilities of sudden and grave seriousness. Under the complex conditions of modern life, and even among people who live nearer to Nature and under less complex conditions, as among the Indians, as shown by two recent letters[6] in THE JOURNAL, many serious obstetric complications occur—complications that often mean death to the mother or child if not rightly

5. THE JOURNAL A. M. A., Jan. 6, 1912, p. 1.

6. Shoemaker, F.: THE JOURNAL A. M. A., Jan. 6, 1912, p. 31. Krulish, Emil: Ibid, Feb. 17, 1912, p. 504.

managed. In the large cities particularly, untrained midwives attend a vast proportion of obstetric cases. Viewing these as surgical cases, every patient should be attended by a person practically trained in obstetrics.

Yet (and this is a point brought out in strong relief in the interesting correspondence[3] elicited by our otherwise regrettable article[4] on the management of normal labor), conditions must be dealt with as they are, not as they should be. One man cannot lay down rules drawn from the conditions of his own practice, to be followed implicitly and without modification by another practitioner in wholly different circumstances; and this brings us to the suggestion which was the purpose of this editorial.

The employment of midwives in the large cities, for the present at least, seems almost a necessity, and especially so long as there is such a large foreign-born population in these cities. But is it not possible to make available for teaching purposes in the practical training of physicians and midwives a large number of the cases that are now attended by untrained midwives? Is it not a fact that midwives are employed in the majority of instances because their services can be had at less cost than those of a physician? The problem is to bring about a condition in which a large number of such patients can be treated in hospitals under the best of conditions and be used for teaching purposes. It should be possible also to utilize much of this material outside of the hospitals by having out-patients attended by students, accompanied of course by trained physicians. These methods have reached the fullest development in European countries. The aim in the teaching of obstetrics above all things should be to make it practical; at the present time practical teaching is impossible, simply because what should be available material for the purpose is not available. Can it not be made so?

3. THE JOURNAL A. M. A., Feb. 3, 1912, p. 428; also this issue, Correspondence Department.
4. THE JOURNAL A. M. A., Jan. 27, 1912, p. 274.

Current Comment

MRS. EDDY AND THE NATIONAL LEAGUE FOR MEDICAL FREEDOM

Mrs. Mary Baker Eddy, the founder of Christian Science, years ago, forbade her followers to enter into any league with "occultists, mesmerists and venders of patent pills." If she were alive to-day, she would undoubtedly have prevented the organization of which she was the head from making the fatal tactical blunder of an alliance with the pseudomedical cultists, sectarians and faddists, patent-medicine fakers, food adulterators and quack doctors, who go to make up a part of the motley crowd which calls itself a "League for Medical Freedom." This injunction on the part of Mrs. Eddy, evidently overlooked by her successors, has been pointed out by Mrs. Augusta E. Stetson, insurgent Christian Scientist and ex-reader in one of the leading eastern churches of this cult. Mrs. Stetson says, according to the Rochester (N. Y.) *Evening Times*, that such an alliance is in direct violation of the injunction of the founder, who wrote, "By rendering error such a service, you lose much more than can be gained by mere unity on the single issue of opposition to unjust medical laws." It has been recognized for some time that the alliance of "Christian Science" with all sorts of medical fads and fakes was rendering error a great deal of service. In fact, it has generated about as much error as a single organization possibly could. Whatever one may think of Mrs. Eddy's religious and philosophic vagaries, no one familiar with her life has ever questioned her practical shrewdness and farsightedness. That those who have succeeded her as leaders are not her equals is not strange. History is full of causes and crusades which, after the death of the prophet who inaugurated them, went to pieces through the blunders of disciples who succeeded to the leadership.

IDENTIFYING THE MANUFACTURER

Last week we called attention to a new organization, composed of a number of the large pharmaceutical manufacturing companies, the National Association of Manufacturers of Medicinal Preparations. Here it is worth noting that at least one manufacturing company was unable to stomach this newest cabal in the pharmaceutical world and refused to join it — although its representative was present at its organization. As we then recorded, with sorrow, this association is apparently opposed to legislation in the interest of public health and safety whenever such legislation would result in decreased profits for the manufacturers. For instance, it opposes the law that would prohibit the making of exaggerated and misleading therapeutic claims; it opposes the law that would regulate the transportation of habit-forming drugs and it opposes a law requiring the weight of drugs, sold in package form, to be printed on the label. To all this we called attention last week. The National Association of Manufacturers of Medicinal Preparations also opposes a law that would compel the manufacturers of all medicinal preparations to put their own names on their own products. Those of our readers who remember an article published in THE JOURNAL a year and a half ago, entitled "Pharmaceutical Manufacturers and the Great American Fraud," will realize at once why this association of pharmaceutical manufacturers is opposed to any law that would permit the public and particularly the medical profession, to know the class of trade some of its members cater to. It would naturally prove embarrassing, if not positively painful, if some of the members of this association should have to put their names on such of their products as "Nyal's Headache Wafers," which were declared misbranded under the Food and Drugs Act; "Robusto," the "true bracer for young men"; the pills that were sold by the Nutriola fraud; the "patent medicines" that were supplied to "Professor" Adkin of the notorious New York Institute of Physicians and Surgeons; "Cascarets," which "work while you sleep," or "Danderine," which "grows hair and we can prove it." Under the circum-

stances, then, it is not surprising to learn that the secretary of the National Association of Manufacturers of Medicinal Preparations characterized the bill which would permit the public to identify the manufacturer as "a foolish provision," or that the president of this organization should look on the bill as one "that we can conscientiously oppose." If one's sense of humor can stand the strain, this fact is worth noticing: The president of this new organization, who thus opposes a law that will throw light on the connection between pharmaceutical manufacturers and the "great American fraud," was nominated for his position by a manufacturer who has long shouted from the house-tops that he made "no dope for quackery"! Verily, politics and the nostrum business make strange bed-fellows!

WALDEMAR KOCH

The untimely death of Dr. Waldemar Koch, associate professor of pharmacology at the University of Chicago, at the age of 36, removes another of the group of younger American workers whose high ideals and devoted application to investigation are bringing credit to biologic and medical science in this country. Koch began his studies on the chemistry of the nervous tissues early, entering a difficult field of investigation which few older men have ventured to approach. Realizing that the virgin soil must be tilled by new methods in order to obtain its best offerings, he prepared himself through years of untiring energy for the promising tasks ahead. While Koch's published contributions were in no sense epochal, they show an independence of thought and a convincing earnestness which compel attention. Unfortunate indeed it is that he should have been denied the opportunity of reaping the harvest for which he had been preparing for so long and which was almost in sight. There is something refreshing in the contemplation of the modest mien which characterized the two Chicago colleagues, Ricketts and Koch. Without display of feeling, without thought of popular acclaim, yet with unbridled enthusiasm, these young men trudged along the tiresome path of the real investigator. How different from the ways of those pseudoscientists, unfortunately too numerous, who seek the public eye at every turn, proclaiming their unfailing judgment and oblivious of the real work which the search for truth demands! We may well pause to pay a deserved tribute to those unheralded workers in the advancement of knowledge.

EDUCATIONAL RESEARCH IN LONDON

A Royal Commission on University Education was created in London a few years ago for the purpose of inquiring into the present organization of the University of London and the other facilities for advanced education, general, professional and technical, existing in that city, and to recommend such changes as would appear desirable. The "Appendix of the Third Report" contains articles and testimony from a number of well-known university men and others bearing on all phases of educational work. Among those called on for information in regard to medical education are Dr. Friedrich von Müller, professor of clinical medicine at the University of Munich; Sir William Osler, regius professor of medicine at Oxford University and Mr. Abraham Flexner, of the Carnegie Foundation for the Advancement of Teaching. A review of the statements submitted by these gentlemen appears on another page of this issue of THE JOURNAL.[1]

CLINICAL PROFESSORS AND PRIVATE PRACTICE

Of particular interest are the opinions expressed in the statements referred to in the preceding comment, in regard to the limitation of the private practice of clinical professors — a matter much discussed in this country at present. Neither Osler nor von Müller favors cutting off entirely the clinical professor's private practice, but both advocate that such practice be limited. As von Müller points out, the clinical professor should be selected because of his ability as a scientist and not because of a successful private practice. The clinical professor's attainments should have a wide scientific foundation, so that he would know how to conduct, not only the work of his hospital wards, but also the work in his laboratories. Although a large private practice is not a recommendation, nevertheless some private practice is helpful, since it helps to keep the clinical professor in touch not only with scientific progress, but also with general professional life and with medical practitioners. He must himself be "a good physician because he has to instruct the young generation in practical medicine." Again, should he be "confined entirely to his laboratory and hospital he would be liable to make mistakes and come to wrong conclusions."

THE EFFECTS OF RADIUM EMANATIONS ON THE URIC ACID OF THE BLOOD

Recent investigations by Gudzent[2] indicate that the monosodium urate of the blood exists in two forms, (1) a more unstable laktam urate, and (2) a more stable laktim urate. This observer found that, in the blood of gouty persons containing an excess of uric acid, it is the more insoluble form, or laktim urate, which is responsible for the deposits in the tissues. On experimentation, Gudzent discovered that radium emanation (apparently "radium D") is capable of splitting off nitrogen from the laktim form, making it more soluble, and even decomposing it with formation of carbon dioxid and ammonia. Fofanow, working with Gudzent, introduced monosodium urate experimentally into animal tissues and found that he could make it disappear by means of radium emanation. Further studies by Gudzent showed that the metabolism of human beings, on a purin-free diet, could be markedly affected by inhalations of radium emanation. He found an increase in the excretion of endogenous uric acid and of purin

1. Department of Medical Education and State Boards of Registration, page 580.

2. Gudzent, F.: Einiges über die biologischen Eigenschaften der Radiumemanation und ihre Anwendung bei Krankheiten, Radium, 1911, i, No. 1, p. 1434; abstr. in Zentralbl. f. Biochem. u. Biophysik, 1911, xii, 402.

bases. It is his belief that the emanation activates the ferments which make and which destroy uric acid. Gouty patients exposed to the radium emanation showed an increased excretion of exogenous purins, and the uric acid disappeared from the blood. It is also asserted that tophi actually became smaller or even vanished under the influence of the emanation.

A PROFITABLE "BUSINESS"

The St. Louis *Post-Dispatch* reports that Dr. Waldo Briggs of the St. Louis College of Physicians and Surgeons has brought suit for $200,000 damages against the Missouri State Board of Health for placing that school on the board's discredited list. Particularly interesting is this statement in the *Post-Dispatch*: "Dr. Briggs alleges that he has been proprietor of the college forty years and that his annual income from it was $15,000 to $20,000 a year until September 27 last, when the board placed the school on the discredited list."

A GOOD WAY TO PREVENT ACCIDENTS

An interesting method of educating the public in the prevention of street accidents, which possesses possibilities in other directions, has been employed by the Boston Elevated Railway Company. The railway company offered a large number of prizes to high-school pupils for the best specimens of verses containing instruction and caution in the way of prevention of traffic accidents on the streets, which would appeal particularly to children. The plan created great interest among the school children, and a large number of answers were received. The company awarded about two hundred prizes, the largest being for $50. It is safe to say that practically every pupil in the Boston public schools knew of this contest and its purpose; and interest in its object was thereby communicated to the parents. The company printed a number of the poems offered, the pictures of the authors and a list of the prize-winners in a neat pamphlet. By this plan practically the whole population of Boston was taught a useful lesson in caution.

SHALL WE REFORM OR BE REFORMED?

The question of the secret division of fees for medical or surgical services, which has agitated physicians in various parts of the country for some time past, has reached such a point in New York that it is being discussed by laymen and by newspapers. A little over a year ago, the Erie County (N. Y.) Medical Society appointed a committee to investigate the causes and extent of this evil. The report of this committee appeared in THE JOURNAL,[1] and we then pointed out that, unless this question was promptly settled by physicians themselves, it would be taken up by the public. This prediction has come true. At a recent meeting of the Board of Regents of the University of New York, Mr. Draper, the State Commissioner of Education, in his report abstracted on another page,[2] discussed the subject and recommended a law forbidding the secret payment of commissions, and empowering the Board of Regents to revoke the licenses of any physicians or surgeons found guilty of such practices. The Brooklyn *Eagle*, in a lengthy editorial on Mr. Draper's report, demands that physicians institute a radical reform, and, if this be not done speedily, that the state put an end to secret commissions. THE JOURNAL has repeatedly condemned this practice. It has repeatedly warned physicians that, unless they themselves put a stop to this evil, the public would do it. Under the present plan of organization, the discipline of members and the enforcement of ethical conduct lies with the county society, which alone can call its members to account for wrong-doing. It is the duty of each county society in which such practices are suspected, publicly to declare, in no uncertain terms, where it stands on this question and then to apply its principles to its members. No amount of sophistry or of discussion of the "rights of the family physician" is going to obscure the plain fact that the secret payment of commissions for referred cases, or the secret division of fees among physicians—division, that is, without the knowledge of the patient—is a moral offense which every self-respecting physician or surgeon should consider beneath him. Financial arrangements between patient and physician are, to an extent, necessarily commercial. When fees are secretly divided, however, the issue ceases to be commercial and becomes a moral one.

1. Medical Economics, Jan. 7, 1911, p. 59.
2. Medical Economics, this issue, p. 582.

PUBLIC PARKS AND THE PHYSICIAN

The value of public parks and playgrounds to the great mass of city dwellers is now generally recognized, but in the rapid growth of our cities timely provision for parks is usually overlooked until business and material interests have so much encroached on the available spaces that their conversion into parks is so expensive as to be almost prohibitory. In consequence, these lungs of the cities are utterly inadequate in too many places. While it is true that the health of the workers in a city is one of its most valuable assets from a purely material point of view, as conducing to efficiency and increased output, yet it is a matter of slow and difficult progress to bring the business portion of the community to realize the direct importance of a matter which, at first sight, seems to affect them so remotely. The movement for parks and playgrounds belongs to preventive medicine, in the modern conception of that subject. It is, therefore, the opportunity and the duty of the physician, as a public-spirited citizen, to exercise foresight in this matter, and to use his influence in securing adequate parks, playgrounds and breathing-spaces for the people. Physicians have not been entirely remiss in this matter, as in many places they have been the leaders in this work. Many American cities have realized the value of parks and playgrounds and have spent large sums of money in providing them. Some are splendidly equipped in this respect; so much so that in the recent meetings in Europe, concerning the town-planning and city beautification movement, some of our cities were cited as models to be imitated by the older urban centers of Europe. Berlin is one of these cities, having recently taken up

the matter of providing a system of forest reserves or parks just outside the city, as well as several within the city limits, to give greater opportunity to the people for outdoor air, exercise and recreation — a *receptaculum oxygenii*, as it has been termed. The chairman of a committee having in charge this park promotion enterprise in Berlin recommends that the physicians, with the architects, should be the leading spirits in the hygiene of the masses, and says that it is a matter of reproach that millions are spent on sanatoriums for the treatment of tuberculosis, while no adequate provision is made for giving the masses the air and light and opportunity for recreation which would largely help to prevent the conditions which these sanatoriums try to cure at such great expense. The physician is the leader best fitted to direct such movements and he should not lag and leave to the publicist, the social worker, or others less well equipped the appreciation of the real requirements of the situation.

PHYSICIANS AND "PATENT MEDICINES"

A few weeks ago,[1] we called attention to the fact that the medical profession of the United States was being circularized by a firm that was selling Formamint tablets. The matter is again referred to this week.[2] These tablets are heavily advertised in Great Britain in the newspapers under exaggerated and misleading claims. We predicted that, in this country, the old scheme would be worked — of enlisting the aid of physicians before going to the public. A Canadian subscriber has just sent us a Montreal newspaper that contains an advertisement of Formamint, "the Germ-Killing Throat Tablet." The Formamint advertisement appears in a logical position in the Canadian newspaper. It is bounded on the north by advertisements of Wincarnis and Na-Dru-Co Laxatives; on the east by Beecham's Pills, Hayes' Asthma Cure and Marshall's Catarrh Snuff; on the south by Dr. Roberts' Ointment and Tarolema, and on the west by Doan's Kidney Pills, Blair's Gout Pills and Grasshopper Ointment! Evidently the time is near when it will appear in the newspapers of the United States consistently lined up with Lydia Pinkham, Duffy's Malt Whiskey and Peruna. In this country it is—at present — advertised only in medical journals! All of which leads us to quote once more from an article by an old advertising man, which appeared in *Printer's Ink* a few years ago:

"But the 'patent medicine' of the future is the one that will be advertised only to doctors. Some of the most profitable remedies of the present time are of this class . . . The medical papers will reap the harvest, and the physician himself, always so loud in the denunciation of 'patent medicines,' will be the most important medium of advertising at the command of the proprietary manufacturer. In fact, he is to-day."

1. Jan. 27, 1912, p. 294.
2. Propaganda for Reform department, this issue.

Stammering, Stuttering and Lalophobia. — Cadwallader (*Cleveland Med. Jour.*) classifies all difficulties with consonants under the head of stammering. Stuttering, he says, embraces all trouble with vowels or words beginning with vowels and is eliminated through perfect control of the stroke of the glottis. Lalophobia he defines as fear of stuttering and lack of confidence in oneself.

Medical News

CALIFORNIA

Health Society Bulletin.—The Los Angeles Health Society has issued a *Monthly Bulletin*, which is free to citizens of Los Angeles and others interested in health matters, and the purpose of which is to disseminate information of the work done by the Health Department, to aid in the betterment of health conditions, and to give instruction as to the prevention of disease.

New Officers.—Fresno County Medical Society: president, Dr. Olline B. Doyle; secretary, Dr. Lamont R. Willson, both of Fresno.——Los Angeles County Medical Society, Pasadena Branch: president, Dr. Thomas J. Orbison, Pasadena; secretary-treasurer, Dr. Lewis B. Morton, Altadena (reelected).——Alameda County Medical Association: president, Dr. William A. Clark, San Leandro; secretary, Dr. Pauline S. Nusbaumer, Oakland.

Would Interest Physicians in Civic Work.—The San Francisco Chamber of Commerce has inaugurated a campaign to increase its membership and desires to interest the physicians of the city in the movement. To this end, Dr. Washington Dodge addressed the San Francisco County Medical Society on February 6 on the policy of the Chamber of Commerce, the ambitions it has for the betterment of San Francisco and the reasons why it is incumbent on all good medical men to join in these efforts.

Hospital Notes.—Indorsed by the Merchants' Association of San Diego and the San Diego County Medical Society, the Talent Workers of their city have planned a campaign to raise $50,000 for the erection of a public hospital in the city.——Dr. Fred W. McKibbon has purchased the Oakdale Hospital, South Oakdale, and will build an addition to the institution.——The sum of $211,000 recently awarded to the Merritt Hospital, Oakland, in the condemnation suit of the state against that corporation, has been deposited with the clerk of Oakland County.

Stanford University News.—A new library in Stanford University Medical College is being erected at the corner of Sacramento and Webster Streets. The new building covers an area of 60 by 100 feet and the book stacks will be four stories in height.——A sum of money has been given the university by C. A. Coffin of New York, to start a fund to be used for medical research work, with special reference to the investigation and study of the organisms which cause the infectious diseases of Asia.——Drs. Roy H. Morris and Louis D. Mead have been appointed assistants in medicine and assigned to the department of pediatrics of the medical department of Leland Stanford, Jr., University.

Personal.—The automobile of Dr. Wilton M. Mason, Lodi, was struck by a trolley car, near Lodi, February 7, and demolished, but Dr. Mason was uninjured.——Dr. A. Hieronymus has been appointed city physician of Alameda.——Dr. W. Taylor Cummins, who recently resigned as bacteriologist of the research laboratory of the New York City Health Department, has been made director of the Mary W. Harriman Research Laboratory of the Southern Pacific General Hospital, San Francisco.——Dr. Thomas W. Huntington, health commissioner of San Francisco, has resigned.——Dr. Alanson Weeks has been appointed chief surgeon of the Emergency Hospital service of San Francisco.——Dr. Charles L. Tisdale, Alameda, has taken a trip to Cuba, Bermuda and the Canal Zone.——Dr. John B. Rogers, Napa, has been placed in charge of the Napa State Hospital, pending the election of a successor to Dr. Elmer E. Stone, Napa.——Dr. Clarence A. Wills, Centerville, has been appointed superintendent of the Oakland County Infirmary, vice Dr. William A. Clark, San Leandro, resigned.——Dr. William C. Voorsanger has been elected secretary of the San Francisco Association for the Study and Prevention of Tuberculosis; Drs. George H. Evans, Richard G. Broderick and William C. Voorsanger have been elected members of the executive council, and Drs. Mariana Bertola, Walter B. Coffey, Attilis H. Giannini, Charles G. Levison, Harry M. Sherman and Walter S. Thorne, members of the board of directors.

COLORADO

Personal.—Dr. and Mrs. George L. Knapp, Denver, have returned from Europe.——Dr. Edward Delehanty has been elected president of the medical staff of St. Joseph's Hospital, Denver; Dr. Leonard Freeman, vice-president, and Dr. William C. Bane, secretary.

Corner Stone Laid.—The corner stone of the trade school of the National Jewish Hospital for Consumptives, Denver, was laid February 8. The directors of the hospital propose to teach out-door trades in this school.

Hospital News.—A sanatorium, to cost $40,000, is to be built at Longmont by the Sawyer-Elwood Sanatorium Company.——A number of members of the Southern Colorado Medical Society have leased a house at Alamosa and established a hospital.

Practical Nursing.—The Denver School of Practical Nursing was recently incorporated, with Dr. William J. Workman, president; Dr. Mary Elizabeth Bates, vice-president, and Dr. Edwin J. Rothwell, secretary-treasurer. Physicians connected with the school will give instruction every day in the assembly room of the Y. M. C. A. to women who may be interested in the subject.

New Officers.—Fremont County Medical Society, January 24: president, Dr. Otis Orendorff; secretary-treasurer, Dr. Wilbur T. Little, both of Canon City.——Mesa County Medical Society: president, Dr. Carl W. Plumb; secretary, Dr. Charles N. Needham, both of Grand Junction.——Pueblo County Medical Association, January 17: president, Dr. Madison J. Keeney, Pueblo.

Fellowship Meeting.—About one hundred physicians of the state were the guests of the Pueblo County Medical Society at a good-fellowship banquet in Pueblo, January 25. The object of the gathering was to promote interest in the state medical society meeting, which is to be held in Pueblo September 24-26.——A reception and luncheon was given by the members of the Fremont County Medical Society to the officers of the State Medical Society at Canon City, January 26.

ILLINOIS

Personal.—Dr. Samuel M. Wylie and wife, Paxton, have left for southern Alabama.——Dr. W. W. Wooley, Peoria, who has been ill with rheumatism, is convalescent.

Tuberculosis Day.—Tuberculosis Day was held in Joliet, February 14, and a meeting in the Joliet Theater, under the auspices of the Joliet Antituberculosis Society, was addressed by seven physicians.

Hospital Notes.—The officials of the Suburban Hospital Association, Oak Park, announce that in a short time work will be begun on the new hospital on Ontario Street and Austin Avenue, as the suit brought by property owners has been decided in favor of the Hospital Association.——A committee of twenty-seven has been appointed to solicit funds for the purchase of the Princeton Hospital, that it may be established on a permanent basis as a municipal institution.

State Nurses for Insane.—The State Board of Administration, the State Charities Commission, the State Civil Service Commission and the superintendents of the seventeen state institutions of the charitable group, at a meeting held in Springfield, February 8, recommended that the state should create a distinctive class of nurses especially trained for state service in the care and treatment of the insane and appointed a committee consisting of Drs. William L. Athon, Anna; Sidney D. Wilgus, Hospital, and Eugene Cohn, Peoria, to outline a constructive course of study for nurses in hospitals for the insane, to report at the November conference.

Chicago

Money for Babies.—The entertainment of the Infant Welfare Society, February 14, at the Marquette Club, netted $2,000 for the association.

Mother and Child Welfare.—The Medical Woman's Club of Chicago has completed arrangements for a bureau of information which will supply, free of charge, reliable information and advice regarding the welfare of mothers and children. The bureau will be operated in connection with the John Crerar Library.

Personal.—Dr. Lewis L. McArthur, while operating, February 16, at Michael Reese Hospital, was robbed of his watch and chain, a valuable ring and a considerable amount of money.——Dr. Carl Frischkorn was struck by a street car, February 14, but was not seriously injured.——Dr. Barney Welty is said to have recovered $3,500 damages from the Rock Island Company, the Supreme Court holding that railroad companies are responsible for the negligence of sleeping-car employees.——Dr. J. B. Murphy recently returned from a trip to Cuba and the Canal Zone. While in Havana he was tendered a banquet by the local profession.

Tuberculosis Day.—The Chicago Department of Health devotes much of its current Bulletin to Tuberculosis Day, April 28, which has been set aside by the National Association for the Study and Prevention of Tuberculosis. This is the third annual observance of this day and plans are being made to have the gospel of health preached more widely than ever before. There are approximately 14,000 tuberculosis cases in Chicago and a large number of these are still curable. Tuberculosis can be avoided by keeping up the resisting power; by getting large quantities of pure air, day and night, all the time, everywhere; by avoiding overcrowded, overheated and underventilated living rooms, work-shops, street cars, or amusement places; by avoiding contact with the careless consumptive; by having premises cleaned and disinfected before occupancy; by knowing the source of the milk supply; by avoiding dry sweeping and dusting; by teaching the dangers of putting coins, pencils and other things commonly handled into the mouth; by avoiding overindulgence in alcoholic liquors and by avoiding the use of drugs. In addition to the above statements regarding tuberculosis, the Department of Health Bulletin gives the following acrostic summary of the disease:

TUBERCULOSIS
Undermines the family,
Brings sorrow,
Empties the purse,
Reduces to poverty,
Comes to the careless,
Unfits for work,
Limits life,
Orphans children,
Scoffs at drugs,
Isolates from friends,
Scores 4,000 deaths yearly in Chicago.

INDIANA

Hospital Association at Linton.—At a mass meeting held at Linton, it was decided to form a hospital association and to buy property worth $45,000, to be used for a city hospital.

Public Health Course.—The trustees of the Indiana University School of Medicine announce that they will introduce a course in public health training in their curriculum. This will be given as a post-graduate course, and will fit the students for the degree of D.P.H.—Doctor of Public Health.

Dispensary for Babies.—The Children's Aid Association of Indianapolis has opened a dispensary for babies in the Baldwin Block, with a physician and trained nurse in attendance and daily clinics. The work will be greatly extended during the summer, when so much more need for this work exists.

Duties of Health Commissioners.—A radical change in the duties of county health commissioners is proposed in a bill to be introduced in the next legislature. By the provision of this bill, the health commissioners will be directly answerable to the State Board of Health and will not be allowed to engage in private practice during their term of office.

Social Service Work.—The Indianapolis Board of Health at a recent meeting considered a request of the Indiana University School of Medicine for an appropriation of $2,500 to conduct social service work in connection with the city dispensary. It is planned to employ visiting nurses, who shall visit patients to see that they are receiving proper food, obtaining plenty of fresh air and observing other sanitary precautions.

New State Hospital.—The governor has authorized the employment of an architect and the purchase of a site for a new state hospital in Indiana, for which it is expected the next legislature will make an appropriation. As Indianapolis will probably provide the greatest number of patients for the hospital, the governor suggests that it pay one-half the expense. Owing to the objections made to the use of Military Park, Indianapolis, for this hospital, the selection of a new site was made necessary.

Personal.—Dr. David Ross, Indianapolis, is convalescent after an operation for appendicitis.——Dr. Michael A. Young, Indianapolis, was struck by a trolley block recently and seriously injured.——Dr. Glen E. Howe, Fairmount, who disappeared from Indianapolis ten years ago, has been found in a hospital in Mexico, suffering from injuries sustained while working in a mine.——Dr. Julius J. Grosvenor has resigned as intern in the Indianapolis City Dispensary to become a member of the staff of the Indiana State Reformatory, Jeffersonville, and has been succeeded by Dr. Robert C. Johnson.——Dr. Henry Jamieson has been reappointed a member of the board of park commissioners of Indianapolis.——Dr. James W. Birchfield, Indianapolis, has been appointed by the State Board of Health, supervisor of the inspection of public schools.——Dr. Morton L. Hunt, Winchester, is reported to be critically ill.——Dr. Isaac F. Sweeney, Milton, on the occasion of his seventy-seventh birthday, February 2, was presented by the Wayne County Medical Society with an ebony gold-headed

cane.——Dr. John B. Williams, Anderson, fell on the ice, February 11, fracturing a rib and sustaining other serious injuries.——Dr. David C. Roney, Ridgeville, is reported to be seriously ill at his home.——Fire in the house of Dr. Stratford S. Dupee, Evansville, recently, caused damage amounting to $600.——Dr. Henry A. Sutton, Marion, who was struck by a trolley car in January, fracturing his hip, is reported to be improving.——Dr. James R. Anthony, Indianapolis, was reappointed physician to the Marion County jail.——Dr. Henry W. Eby, Goshen, has returned from Europe.——Dr. Charles Stoltz, South Bend, who was injured several days ago in a collision between his automobile and a street car, is reported to be convalescent.——Dr. John W. Crismond, Anderson, is reported to be critically ill.——Dr. John C. Jolly, Lake, has been reappointed a member of the board of control of the Nancy Hanks Lincoln Burial Grounds in Spencer County.

IOWA

Resolutions Eulogize Moerke.—At a recent meeting of the Iowa Board of Health, resolutions were adopted thanking Dr. Albert C. Moerke, Burlington, for his untiring efforts put forth in behalf of the State Board of Health and expressing regret at his resignation.

Prepare for State Meeting.—President Lawrence W. Littig, Iowa City, and Treasurer William B. Small, Waterloo, of the Iowa State Medical Society were in Burlington, February 5, conferring with the local committee on arrangements for the annual meeting of the society, which is to be held in Burlington, May 8-10.

Hospital Staffs Organize.—At the annual meeting and banquet of the medical staff of Mercy Hospital, Council Bluffs, Dr. Ray B. Tubbs was elected president; Dr. Albert V. N. Hennessy, vice-president, and Dr. James M. Barstow, secretary.——At a recent meeting of the staff of St. Joseph's Mercy Hospital, Fort Dodge, organization was effected and the following officers were elected: president of the general staff, Dr. Charles J. Saunders; vice-president, Dr. Robert Evans, and secretary, Dr. Charles H. Mulroney.

New Officers.—Waterloo Medical Society, February 7: president, Dr. Wayne M. Shirley; secretary-treasurer, Dr. Joseph R. Allen.——Clinton County Medical Society, January 10: president, Dr. Frank O. Kershner; secretary-treasurer, Dr. Cecil W. Brown.——Appanoose County Medical Association, January 16: president, Dr. James L. Sawyers; secretary, Dr. Charles S. James, both of Centerville.——Kossuth County Medical Association: president, Dr. Judson Laughlin, Ledyard; secretary-treasurer, Dr. Evert C. Hartman, Algoma (reelected).——Cedar Falls Medical Association, January 30: president, Dr. Lillian A. Arnett; secretary-treasurer, DR. Ida G. Rhoades, both of Cedar Falls.

Personal.—Dr. Edward E. Dorr has been elected president of the Associated Charities of Des Moines.——Boone County Medical Society gave a banquet on February 7, in honor of two pioneer members of the society, Drs. George D. Rowe, Boone, who came to that city in 1868, and Dr. James H. Noyes, a resident of Ogden since 1867.——Dr. Leroy S. Groves, Creston, is reported to be critically ill at the home of his daughter in Shannon City.——A fire in Villisca destroyed the office equipment of Dr. Jay C. Cooper.——Dr. Ernest A. Jenkinson, Sioux City, has been reappointed physician of Woodbury County, and Dr. Roy M. Conmey, Sergeant Bluff, physician to the county poor farm.——Dr. Herbert V. Scarborough, Grand Junction, has been appointed superintendent of the State Sanatorium for the Treatment of Tuberculosis at Oakdale, vice Dr. Harry E. Kirschner, resigned.——Dr. Lynn J. Putman has been appointed local surgeon for the Burlington System at Shenandoah.

KANSAS

State to Furnish Diphtheria Antitoxin.—The State Board of Health has made arrangements to furnish diphtheria antitoxin free to any patients unable to pay, on requisition from a physician.

New Officers.—Northeast District of Kansas Medical Association, February 8: president, Dr. Hugh P. Wilkinson, Kansas City; secretary-treasurer, Dr. Clarence C. S. Goddard, Leavenworth.

Health Almanac.—The Bulletin of the Kansas State Board of Health for December contains a health almanac, in which January is devoted to small-pox; February to pneumonia; March to measles; April to whooping cough; May to water pollution; June to infants' diseases; July to flies and mosquitoes; August to typhoid fever; September to diphtheria; October to scarlet fever; November to colds and influenza, and December to consumption.

Personal.—Dr. M. I. Hults, Hutchinson, who was recently operated on for appendicitis, is convalescent.——Dr. James Loughridge, Lincoln, who is about to locate in Grant's Pass, Oregon, was given a farewell reception by the residents of Lincoln and presented with a ring.

MARYLAND

Baltimore

Personal.—Dr. J. Thomas Nelson fell on the ice recently and injured his left knee.——Dr. A. Trego Shertzer has been reelected president of the Lakewood (N. J.) Hotel and Sanatorium Company.

Oppose Optometry Legislation.—At the February meeting of the Baltimore Medical Society the subject of discussion was medical legislation, and a resolution opposing any legislation extending the practice of optometry in Maryland was adopted.

Medical Orchestra.—Dr. Charles F. Nolen has issued a circular, inviting the physicians interested in music to join him in forming a medical orchestra, similar to those which already exist in several foreign cities. A vocal club is proposed in connection.

New Hospital.—A new hospital was opened in South Baltimore, February 19, known as the South Baltimore Hospital. It has accommodation for twenty-five patients and is under the charge of Drs. Clarence P. Erkenbrach, William D. Olmstead and Edward J. Miller.——The new home of the Baltimore General Dispensary was opened February 15. The building is two stories and a basement in height and has been erected at a cost of $19,500.

MISSISSIPPI

New Officers.—Forrest County Medical Society, February 8: president, Dr. Lawrence B. Hudson; secretary-treasurer, Dr. Charley C. Hightower, both of Hattiesburg.

Addition to Sanatorium.—A contract has been let for the addition of a one story to the Jackson Sanatorium and for the construction of two additional wards, which are designed especially for convalescents.

Personal.—Dr. Matthew J. L. Hoye, Meridian, has been appointed physician of Lauderdale County.——Dr. Benson B. Martin has been appointed surgeon to the Vicksburg Hospital.——Dr. James P. Wall, Jackson, has been elected secretary of the Mississippi Baptist Hospital.

State Board.—On February 3, the following members of the new State Board of Health were sworn in: First District, Dr. Theodore Borroum, Corinth; Second District, Dr. Samuel E. Eason, New Albany; Third District, Dr. Morris J. Alexander, Tunica; Fourth District, Dr. Joseph C. Armstrong, Water Valley; Fifth District, Dr. William W. Reynolds, Meridian; Sixth District, Dr. W. W. Hall, Lumberton; seventh District, Dr. Charles E. Catchings, Woodville; Eighth District, Dr. James R. Jiggitts, Canton; State at large, Drs. John Darrington, Yazoo City; Elbert A. Cheek, Arcola; Theophilus E. Ross, Hattiesburg; Giles S. Bryan, Amory, and Inman W. Cooper, Newton. Dr. Giles S. Bryan, Amory, was elected president; Dr. William W. Smithson, Jackson, secretary, and Drs. John Darrington, Yazoo City, Charles E. Catchings, Woodville, and Joseph C. Armstrong, Water Valley, were elected the executive committee.

Work of the State Board.—The State Board of Health has issued a pamphlet of information relative to the work done by the board during the year. The work has been along the lines of educating the people on the prevention of consumption, typhoid fever, malaria, hookworm and other diseases; of diagnosing certain diseases free of charge to the people through the State Board of Health Laboratory; of making a special study of hookworm disease in order to determine the amount of it in this state; of making sanitary surveys with a view to pointing out to the people conditions which cause disease, and that should be corrected, and of treating people who are found afflicted with hookworm disease. The educational campaign has been conducted by lectures, by the aid of the press, through correspondence and conferences, by health exhibits, health bulletins and placards on tuberculosis. During the year 968 of the 1,783 physicians in the state were interviewed, and 1,350 manifested interest in the work of the board; 16 lectures were given to physicians; 831 physicians were reached by these lectures; 5,836 letters and circulars were sent to physicians; 1,500 teachers were visited and letters were written to 1,226; bulletins were sent to all teachers in the state; lectures were delivered at institutes to 3,760 teachers; the health bulletins were sent to 310 newspapers and 150 articles were mailed to newspapers; thirty-seven sani-

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tary editions of newspapers were issued; 130 papers, approximately, were personally visited by representatives of the board; 246,000 bulletins were distributed in the state; 25,726 personal and circular letters were sent out; 511 schools were inspected; 7,791 addresses were delivered to 100,213 people, and five public health exhibits were made, which were visited by approximately 32,700. In the work against hookworm disease, 15,390 patients were treated in dispensaries and 3,908 outside of dispensaries by representatives of the board, and 15,803 cases were treated by outside physicians. Fourteen infectious surveys and ten sanitary surveys were made.

NEBRASKA

Small-Pox in Hospital.—Eight cases of small-pox were reported in Ingleside Hospital, Hastings.

New Officers.—Sheridan County Medical Society: president, Dr. Zadok T. Daniel, Rushville.——Dawson County Medical Society, February 2: president, Dr. Earle C. Stevenson, Gothenburg; secretary, Dr. Calvert L. Emmons, Overton.

Personal.—Dr. Wilford H. Crutcher, Palmer, has been appointed a member of the staff of the Kankakee (Ill.) State Hospital.——Drs. George M. and Eliza B. Mills, Kearney, announce their retirement from active practice.——Dr. Harold Gifford, Omaha, who has been ill with pleurisy, is reported to be convalescent.

New Tuberculosis Hospital.—The plans for the new building for the State Tuberculosis Hospital, Kearney, call for a main building, 50 by 32 feet and two stories in height, with two one-story wings, 100 by 27 feet. The board has $16,000 remaining in the fund after the purchase of the building now in use and this, it is believed, will be sufficient for the construction of the new buildings.

NEW YORK

Personal.—Dr. Joseph J. O'Connell, Brooklyn, has been nominated by the governor as health officer of the Port of New York, vice Dr. Alvah H. Doty.——Dr. William T. Shanahan, Sonyea, sails for Europe, February 24, to visit special institutions for the care and treatment of the epileptic and feebleminded in Great Britain and on the Continent.

State Hospitals for the Insane Overcrowded.—According to the annual report of the State Commission in Lunacy, there are 33,311 patients in the institutions for the insane in this state. Of these 31,051 are in state hospitals. The number of deaths among these for the year 1911 was 2,885, which is a slight increase over the death-rate of the previous year; and there was also a slight increase in the number who recovered over the total of 1910. The disbursements amounted to $7,931,966, while the sum collected from paying patients was $400,525. The commission urges the speedy development of the Mohansic State Hospital and the Creedmore Branch of the Long Island State Hospital and the extension of the lease of Ward's Island to fifty years.

New York City

Off for Europe.—Dr. and Mrs. Herman B. Baruch and Dr. and Mrs. Simon Flexner have sailed for Europe.

Measles and Scarlet Fever.—The number of cases of measles and scarlet fever reported in this city for the week ended February 10 shows a great increase in the prevalence of these diseases, there being 868 cases of measles and 332 cases of scarlet fever.

New Tuberculosis Home.—Plans have been filed for additional room for tuberculous patients on Blackwell's Island by building an entirely new building adjoining the present structure on the north end of the island. The main feature of the building will be four roof gardens and a solarium. The building will be constructed of stone and will cost about $180,000.

Fund Nearly Complete for Tuberculosis Preventorium.—Jacob H. Schiff has contributed an additional $5,000 toward the Tuberculosis Preventorium for New York Children at Farmingdale, N. J. Mrs. Schiff has also contributed $1,000 for the same purpose. There now remains but $4,000 to be collected in order to complete the $150,000 required for the new buildings.

Commission to Study Typhoid.—Commissioner Lederle has appointed a commission of physicians and sanitary experts to study the methods of the local Health Department in handling typhoid and to suggest, if possible, improved methods. Among those who were present at the first meeting of the commission were Prof. William T. Sedgwick of the Massachusetts Institute of Technology, Prof. George Whipple of Harvard, and Prof. C. E. A. Winslow of City College, Dr. John Winters Brannan, Dr. Alexander Lambert and Dr. Herbert D. Pease, and a number of representatives of the New York Health Department.

Academy Gets Portrait of Dr. Wyeth.—At the regular meeting of the Academy of Medicine on February 15 a bust portrait of Dr. John A. Wyeth, a former president of the academy, painted by J. Campbell Phillips, was presented to the academy by Dr. Simon Baruch, chairman of a committee of five appointed to procure the portrait. The portrait is to be placed in the gallery devoted to portraits of presidents of the New York Academy of Medicine.

Leprosy in New York.—The death of one of the members of the Blackwell's Island leper colony on February 12 has occasioned considerable discussion regarding the communicability of this disease, and Dr. George Henry Fox is responsible for the statement that his son, Dr. Howard Fox, has seen as many as thirty lepers in this city during a single year, and that a number of individuals are known to have suffered from leprosy for many years who still pursue usual avocations without communicating the disease to those with whom they come in contact. Dr. Walter Conley, who is in charge of the leper colony on Blackwell's Island believes that the fear of the disease is more harmful to a community than the few cases of the disease itself and that such a fear is entirely unwarranted in this climate and he urges the need of instructing the public as to the actual facts concerning leprosy.

Straus Makes a Challenge.—Before sailing for Rome to represent the United States at the Seventh International Congress on Tuberculosis, Nathan Straus has sent out the following challenge: "In the efforts that are being made to protect babies from milk-borne diseases, such as tuberculosis, typhoid fever, diphtheria, scarlet fever, sore throat and summer complaint, the well-considered policy of the public health service and of the foremost health officers of the country is seriously hindered by attacks based on ignorance. The statement is repeated with assurance, without proof, that the use of pasteurized milk causes rickets, scurvy and anemia. In order to bring this issue to an end I offer $1,000 for any case of scurvy or rickets or anemia caused by feeding a baby with properly pasteurized milk." The jury to decide in any alleged case is to consist of three officers of the U. S. P. H. and M.-H. Service, Dr. Rupert Blue, Surgeon General; Dr. Milton J. Rosenau, and Dr. John Anderson of the Hygienic Laboratory at Washington, or any other jury that they may decide on.

NORTH CAROLINA

Hospital News.—The McDaniels Memorial Hospital, Kinston, has recently made a material addition to its accommodation for patients.——The corner stone of the new Goldsborough Hospital will be laid with appropriate ceremonies, February 22.

Personal.—The board of directors of the State School for Feeble-Minded Children has elected Dr. Ira M. Hardy, Washington, superintendent. Dr. William H. Dixon, Edward, has been appointed a director of the school.——Dr. Numa D. Bitting, Durham, was painfully injured when his buggy was overturned in a runaway accident, February 8.

New Officers.—Fourth Councilor District Medical Society of North Carolina, February 13: president, Dr. Lacy D. Wharton, Smithfield; secretary-treasurer, Dr. Michael M. Saliba, Wilson.——Surry County Medical Society, February 13: president, Dr. R. E. L. Flippin, Pilot Mountain; secretary-treasurer, Dr. Edward M. Hollingsworth, Mount Airy.

OREGON

New Officers.—Baker County Medical Society: president, Dr. John W. Huff; secretary, Dr. Claude M. Pearce (reelected), both of Baker.——At the annual meeting of the State Board of Health held in Salem, Dr. Charles J. Smith, Pendeleton, was elected president; Dr. Alfred Kinney, Astoria, vice-president, and Dr. Calvin S. White, Portland, secretary.

PENNSYLVANIA

New Officers.—McKees Rocks Medical Society: president, Dr. Joseph G. Steedle; secretary, Dr. George A. Cartwright.——Dauphin County Medical Society: president, Dr. Harvey F. Smith; secretary-treasurer, Dr. Thomas S. Blair, both of Harrisburg.——Erie County Medical Society: president, Dr. Guy C. Boughton; secretary, Dr. Judson M. Burt, both of Erie.——Northampton County Medical Society, January 19: president, Dr. Walter D. Chase, Bethlehem; recording secretary, Dr. W. Gilbert Tillman, Easton.

Hospital News.—Plans have been made for the organization of the West Side General Hospital, Dorranceton, Wilkes-Barre. A site has already been secured for the hospital, on which there is at present a fifteen-room house. It is hoped to make the necessary alterations and have the hospital in operation not later than May 1. Dr. William H. Faulds is chairman and Dr. David H. Lake secretary of the committee of physicians which has the matter in charge.——The board of managers of the Reading Hospital has elected the following resident physicians to go on duty July 1: Dr. Frank Wrenn, Silver City, N. C.; Dr. C. J. Schmitz, Sterling, Ill., and Dr. Leon C. Darrah, Reading.——The Coppinger Private Sanitarium, Scranton, is to be converted into a hospital devoted entirely to diseases of women.

Personal.—Dr. J. Norman White, Scranton, has been appointed deputy coroner of Lackawanna County.——Dr. Leo O'Dell, Tylersburg, was thrown from his sleigh in a runaway accident, February 13, fracturing his leg.——Dr. H. W. Mitchell, formerly of Danvers, Mass., has entered upon his duties as superintendent of the Warren State Hospital.——Dr. Benjamin Pearson, Slippery Rock, is seriously ill.——Dr. John B. Mahon, Pittston, slipped on an icy pavement, February 8, fracturing his leg.——Dr. Samuel J. Waterworth, Clearfield, was slightly injured when a freight train on the Buffalo, Rochester and Pittsburgh Railroad demolished his automobile at Clearfield, February 6.——Drs. John B. Herr, Charles Howard Witmer, Philadelphia, and G. A. Sayers have been appointed members of the dispensary staff of St. Joseph's Hospital, Lancaster.——Dr. Samuel H. Heller, Lancaster, has succeeded Dr. Warren F. Kline, Lebanon, resigned, as assistant surgeon of the Fourth Infantry, N. G. Pa.

Typhoid at Coatesville.—On February 15, nineteen new cases of typhoid were reported at Coatesville, making a total of 111 cases. The Assistant Supervisor of State Nurses has been sent from Harrisburg to take charge of the emergency hospital at Elks Home. Eighteen men from the State Health Department are in Coatesville under the charge of Dr. Charles J. Hunt, Philadelphia, associate medical inspector, to investigate conditions. The epidemic is said to be due to the water supply and the first act of the state authorities was to construct a filter plant near the pumping station. The state inspectors have also inspected dairies within a radius of five miles of Coatesville and samples of milk have been taken for analysis. Dr. Samuel G. Dixon, State Health Commissioner, has notified the Water Department of Wilmington, Del., that it would be well to purify the Brandywine water used for drinking purposes at Wilmington, as Coatesville's drainage runs into the Brandywine creek.

Philadelphia

Lincoln Memorial Building.—On Lincoln's birthday, February 12, the first sod was turned, preparatory to the erection of the Lincoln Memorial Building of Mercy Hospital and School for Nurses, by the mayor of Philadelphia. The new building is to be five stories in height, of modern construction and with up-to-date equipment.

Jefferson Alumni Appeal.—The Alumni Association of the Jefferson Medical College issued an appeal, January 13, to the graduates of the college asking them to contribute to a fund to endow a room in the Jefferson Medical College Hospital, to be used by graduates who are unable to pay for hospital service. The response so far has amounted to $750.

Faculty Promotions.—Promotions in the Medical Department of the University of Pennsylvania were made February 12, as follows: Dr. Edward Lodholz, to be assistant professor in physiology; Dr. William H. F. Addison, assistant professor in normal histology; Dr. George H. Fetterolf, assistant professor in anatomy, and Dr. L. A. Ryan, assistant professor in chemistry and toxicology.

Personal.—Dr. W. Wayne Babcock escaped uninjured from what might have been a serious accident, when a train grazed his motor car, bending the front axle, at a railroad crossing near Woodbury, N. J., February 13.——Dr. Lewis W. Steinbach sailed February 13 for an extended trip to Egypt and the Holy Lands.——Dr. Joseph Cook, Jr., for the past year chief resident physician of the University Hospital, has resigned and intends to go to Persia as a medical missionary. Dr. John B. Nutt has been appointed to succeed him.

Gifts to Medical School in Canton.—It is announced that Mr. S. F. Houston and former Provost C. C. Harrison have given $1,000 each to the McCracken fund for the University Medical School at Canton, China. Both of these amounts were obtained through the efforts of George W. Pepper, who has also pledged $1,000 to the fund. Two faculty residences are projected to be built on the campus of the Medical School at Canton, one of which will be built by the members of the Society of Friends, of which Dr. William W. Cadbury, first assistant to Dr. George Y. McCracken, is a member. There is also a wing of the hospital just nearing completion, for which there are still some final payments to be made and about $3,000 will be needed for equipping this new building and the different classes of the University here are doing their part to raise this fund.

Dispensary Building Opened.—The new dispensary building of the Philadelphia Polyclinic and College for Graduates in Medicine was formally opened February 5, when a reception was tendered by the president of the board of trustees to the board, the incorporators of the hospital and the members of the medical staff. The building is constructed on the most approved fire-proof plan, with exposed plumbing, all corners and angles rounded, all floors made of concrete, the walls and woodwork finished with glazed surfaces and is as nearly hygienic as is possible. To each department of the dispensary is attached a laboratory equipment to aid in the study and diagnosis of disease. The accident emergency suite is thoroughly equipped and up-to-date. Arrangement has been made for the separation of the sexes, and modern bath appliances have been provided.

Medical Staff for Oncologic Hospital.—On February 16, the trustees of the American Oncologic Hospital announced the election of the following medical staff for the institution: surgeons, Drs. Samuel McClary, 3d, and Walter G. Elmer; gynecologists, Drs. P. Brooke Bland and Christian B. Longenecker; physicians, Drs. William S. Newcomet and Charles A. E. Codman; pathologist, Dr. Gordon J. Saxon; ophthalmologist, Dr. Edward Shumway, and laryngologist, Dr. Rufus B. Scarlet. The assistant staff is composed of Drs. Nelson M. Brinkerhoff, surgeon; George A. Knowles, physician; Frank B. Baird and Isaac W. Brown, clinical assistants; George L. DeWald, anesthetizer, and Asa Munson Chandler, odontologist. The consulting physicians include Drs. Edward E. Montgomery, Oscar H. Alli, William E. Hughes, Allen J. Smith, Charles K. Mills, G. Oram Ring, Milton B. Hartzell, Arthur Ames Bliss, Henry J. Off, S. McCuen Smith and Dudley W. H. Guilford.

Another Open-Air School Established.—The Pennsylvania Society for the Prevention of Tuberculosis has made all arrangements for establishing an open-air school on the roof of the Lighthouse at 152 West Lehigh Avenue, and the Board of Education has authorized the assignment of a teacher and the transfer of children to that school. It will accommodate twenty-five or thirty children and will be open during the last week in February. The roof of the Lighthouse is enclosed on all sides by large glass windows and doors which can be opened. The pupils will be anemic boys and girls between 8 and 13, and with the exception of an hour and a half at noon, when they go home to lunch, the children will be in the open air during the whole school period from 9 a. m. to 3:30 p. m. In order to gauge the effectiveness of the open-air treatment, the society will take weekly records of the weight and general condition of the children in this school and compare them with those of the children of the open-air school of the Phipps Institute and the children of the open-air school of the Board of Education at Twelfth and Wharton Streets.

SOUTH CAROLINA

New Hospital.—Work has been commenced on the Knowlton Hospital, Columbia, which is to cost $40,000 and will be completed early in September. This in addition to the old building will provide accommodation for seventy private patients.

New Editor.—In the January number of the *Journal of the South Carolina Medical Association*, the resignation of Dr. Julius C. Sosnowski, Charleston, as editor, and the announcement of Dr. Edgar A. Hines, Seneca, as his successor, appear. The office of publication of the journal will henceforth be at Seneca.

Personal.—Dr. Francis A. Coward has been elected city bacteriologist of Columbia.——The Columbia Medical Society, at its meeting January 8, adopted resolutions declaring its belief in the innocence of Dr. Lewie A. Griffith, Columbia, in the matter of the criminal charges brought against him, and expressing the full confidence of the society in Dr. Griffith's ultimate and complete exoneration.——Dr. Charles F. Williams, Columbia, has purchased 70 acres of land, three miles from the city, on which he proposes to establish a tuberculosis sanatorium.

New Officers.—Spartanburg County Medical Society, January 26: president, Dr. A. Dean Cudd; secretary, Dr. L. Rosa H. Gantt, both of Spartanburg.——Kershaw County Medical Association, January 10: president, Dr. Sidney C. Zemp; sec-

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retary-treasurer, Dr. William J. Burdell, both of Camden (both reelected).——Union County Medical Society, January 2: president, Dr. Joseph H. Hamilton; secretary-treasurer, Dr. Robert R. Berry, both of Union.——Greenville County Medical Society, January 1: president, Dr. Leland O. Mauldin; secretary, Dr. Charles O. Bates, both of Greenville.——Dorchester County Medical Association: president, Dr. W. P. Shuler, Grover; secretary, Dr. John B. Johnston, St. George.——Columbia Medical Society: president, Dr. Henry W. Rice; secretary-treasurer, Dr. William R. Barron, both of Columbia.——Saluda County Medical Association: president, Dr. Samuel M. Pitts, Chappells; secretary-treasurer, Dr. Jonathan D. Waters, both of Saluda.——Fourth District Medical Association: president, Dr. Theodore Maddox, Union; secretary, Dr. Ernest W. Carpenter, Greenville.——Lexington County Medical Society: president, Dr. Frank G. Roberts; secretary-treasurer, Dr. James J. Wingard, both of Lexington.

TEXAS

Senior Student Dies.—R. T. Wilson, Jr., Gatesville, a member of the senior class of the State Medical College, Galveston, died February 3 at the John Sealy Hospital.

House for Health Board.—To centralize all branches of the city government, the Emergency Hospital, health office and city chemist's department of Dallas have been established in the new house opposite the City Hall.

Hospital to Be Established at Dallas.—Dr. John O. McReynolds announces that $1,000,000 is to be raised for a new Methodist Hospital, Dallas, in connection with the Medical College of the Southern Methodist University.

Fewer Epileptics.—The report of the State Epileptic Colony, Abilene, shows at the close of the fiscal year of 1911 there were 231 men and 157 women in the colony, a decrease for the year of thirty-seven and twenty-two respectively.

Medical Society Organ.—The *Bulletin of the Travis County Medical Society* has recently been issued. It contains reports of the meeting of the society and the medical societies of adjacent counties, a list of new members, papers read before the society, personal notes, obituaries, etc.

Hospital News.—At a called meeting of the Denison County Medical Society a site on Brown avenue, between Main and Woodard streets, was proposed for the new City Hospital.——St. Paul's Free Clinic and Dispensary have been incorporated at Dallas without capital stock.——The Houston Antituberculosis League has opened a free dispensary at 55 Cable street.

Personal.—Dr. Manton M. Carrick, Dallas, accidentally took poison February 8, but is expected to recover.——Dr. Columbus Hyder, Commerce, was operated on at Greenville for appendicitis, February 8, and is reported to be doing well.——Dr. Alfred C. Trigg, Lockhart, is seriously ill on account of a cerebral hemorrhage.——Fire in Orange, January 30, destroyed the three-story building of Dr. Edgar W. Brown, including offices of Drs. William P. Coyle, Arthur R. Sholars and Samuel W. Sholars.——Drs. William N. Sneed and William N. Sneed, Jr., Fairfield, were thrown from their buggy in a runaway accident recently and received painful injuries.——Dr. N. H. Ellis, Midland, is reported to be ill with meningitis.

New Officers.—Austin County Medical Association, January 16: president, Dr. Justus S. Davidson, San Felipe; secretary-treasurer, Dr. Otto E. Steck, Bellville.——Panhandle Medical Association, January 16-17: president, Dr. Robert S. Killough, Amarillo; secretary-treasurer, Dr. Walter C. Dickey, Memphis.——Taylor County Medical Society, January 15: president, Dr. Thomas B. Bass, Abilene; secretary-treasurer, Dr. Clarence M. Cash, both of Abilene.——Harris County Medical Society: president, Dr. Harvin C. Moore; secretary-treasurer, Dr. Leonard Allen, both of Houston.——Galveston County Medical Society, January 5: president, Dr. William F. Starley; secretary-treasurer, Dr. William C. Fisher, Jr., both of Galveston.——Hale County Medical Society: president, Dr. Alexander H. Lindsay, Plainview; secretary-treasurer, Dr. E. F. McLendon.——Bexar County Medical Association: president, Dr. William A. King; secretary, Dr. Thomas Dorbandt, both of San Antonio.——Wise County Medical Society: president, Dr. John A. Embry; secretary, Dr. Peyton J. Fullingim, both of Decatur.——Guadalupe County Medical Association: president, Dr. R. Lee Knolle, Seguin; secretary-treasurer, Dr. Earlie A. Benbow, Kingsbury.——Tom Green County Medical Society: president, Dr. Andrew J. Marberry; secretary-treasurer, Dr. Carolina L. Mitchell (reelected).——Titus County Medical Society: president, Dr. Sidney R. Crabtree; secretary, Dr. William H. Blythe, both of Mount Pleasant.——Karnes County Medical Association: president, Dr. C. S. Lane, Cherokee; secretary-treasurer, Dr. Richard C. Youngblood, Cestohowa.——Hunt County Medical Society: president, Dr. James J. Coppedge, Lone Oak; secretary-treasurer, Dr. D. Richard Waddle, Greenville.——Falls County Medical Society: president, Dr. Burr G. Ward; secretary, Dr. N. D. Buie, both of Marlin.——Williamson County Medical Association: president, Dr. Green L. Robertson; secretary-treasurer, Dr. Columbus C. Black.

GENERAL

Eye, Ear and Throat Men to Meet.—Announcement has been made that the seventeenth annual convention of the American Academy of Ophthalmology and Oto-Laryngology will be held at Niagara Falls, Ont. August 20-22, with headquarters at the Clifton House.

First-Aid Packets in Canal Zone.—The Sanitary Department of the Canal Zone has issued first-aid packets of the standard army pattern to be placed on all locomotives, steam-shovels, dredges, cranes and boats of the Isthmian Canal Commission and the Panama Railroad Company.

French Physician Awarded American Medal for Exploration.—The Cullum gold medal, founded by the late General George W. Cullum, of the United States Army, and awarded annually for distinguished work in polar exploration, has been awarded by the American Geographical Society to Dr. Jean B. E. A. Charcot of Paris, the French Antarctic explorer. It has been presented to him by the American Ambassador to France.

Bequests.—The following bequests have recently been announced:

Mount Sinai Hospital, New York City, $100,000; Ladies' Auxiliary of Mount Sinai Hospital, $5,000; Jewish Children's Sanatorium, Rockaway, $20,000; the Neustadter Home (to be established for convalescents or persons in delicate health), $100,000, by the late Mrs. Caroline Neustadter.

Seney Hospital, Brooklyn, $10,000, by the late Roland D. Armstrong, for the maintenance of two free beds.

A hospital bed in a New York hospital, more than $5,000, proceeds of a concert by New York Symphony Society, February 6, in memory of Samuel S. Sanford.

St. Vincent's Hospital, New York City, $15,000, by the late Eugene Kelly.

Lynn (Mass.) Hospital, $5,000; Free Home for Consumptives, Boston, $1,000, by the late Oliver I. Kimball, Newton, Mass.

FOREIGN

Transformation of the Annales des Maladies Génito-Urinaires.—As it enters on its thirtieth year, the *Annales des Maladies des Organes Génito-urinaires* changes from a fortnightly to a monthly, with the title *Journal d'Urologie Médicale et Chirurgicale*. The *Annales* was founded in 1882 and has been conducted by Dr. E. Delefosse. He now retires and a board of nine members carries on the work, with Marion and Heitz-Boyer of Paris as editors in chief and Saint-Cène secretary. It will be found listed regularly as heretofore in our foreign Current Medical Literature Department but under its new name.

New Year Honors to British Physicians.—The list of New Year honors in England contains the names of six physicians upon whom knighthood has been conferred. These are: Sir John Hawtrey Benson, president of the Royal College of Physicians of Ireland; Sir Robert John Collie, medical examiner to the London County Council; Sir James Mackenzie Davidson, consulting surgeon to the Roentgen Ray Department of Charing Cross Hospital; Sir George Henry Savage, consulting physician to Guy's Hospital and to Earlswood Asylum for Idiots; Sir Bertram Coghill Alan Windle, president of University College, Cork; and the Honorable Sir Charles Kinnaird Mackellar, a member of the Legislative Council of New South Wales. Dr. Arthur Newsholme, the vital statistician, was made a Companion of the Bath.

Death of Hansen, the Leprologist.—G. Armauer Hansen, the Norwegian biologist and zoologist, and the discoverer of the *Bacillus lepræ*, died in his native city, Bergen, Norway, February 13, aged over 70. As early as 1868 he entered the practical field as a physician for the lepers' home and in 1875 he assumed official charge of the hospitals for this disease in his native land. In 1873 he was able to lay before the scientific world the results of his pathologic-anatomic studies, isolating the bacillus which was thereafter named the bacillus of Hansen. As an active and authoritative worker in the elimination of this disease he worked out legislative measures which during the following years practically eradicated this disease in Norway and which were copied in other countries for the same purpose. In the eighties he made a visit to the United States, visiting Wisconsin, Minnesota, Iowa, North

and South Dakota, for the purpose of studying the disease among immigrated countrymen. Besides his work in medicine, he has been active as a zoologist and won a solid reputation for his studies on the lower sea animals. In 1909, at the Second Lepra Conference, held at Bergen, he was elected honorary president of the permanent lepra committee, succeeding Rudolph Virchow. On his seventieth birthday, July, 1911, the *Medicinsk Revue* in Bergen issued a festschrift in his honor.

LONDON LETTER

(From Our Regular Correspondent)

LONDON, Feb. 10, 1912.

The National Insurance Act

A grave crisis is approaching with regard to the national insurance act. The opposition of the profession is practically unanimous. The British Medical Association has received more than 27,000 pledges declining to work the act except on terms acceptable to the association. This amounts to practically all the physicians who are available for service under the act. A meeting is about to be held by the representatives of the British Medical Association when the question will be decided whether the profession will decline to work the act entirely or will endeavor to do so, and endeavor to obtain its six points by local regulations. As explained in previous letters, much dissatisfaction has been expressed at the failure of the council of the association to obtain the six points by negotiation with the government. But the council acted only in accordance with the instructions of the representative body, the members of which in turn received mandates from the local divisions of the association. Meetings of these divisions are being held throughout the country and the members have now the opportunity of altering the policy of the association, if so disposed. There are two parties in the profession, which favor a moderate and an extreme policy of opposition, respectively. The former contends that the policy of no service whatever, recommended by the latter, is dangerous, for it is a delusion to suppose that the profession can prevent the act from coming into operation, or even prevent medical benefits from being given in one form or another. Failing to obtain physicians to work the act, the commissioners have power to suspend benefit and give the insured the equivalent in cash. In such a case the friendly societies, strengthened in numbers and prestige, would undertake the organization of the separate medical services. They would be free from any of the restrictions which the act imposes on the insurance committees. They could appoint and dismiss physicians at their pleasure, and make individual bargains with them, playing off one against the other.

Lunacy in England and Wales

The "Annual Report of the Commissioners in Lunacy," for the year 1910, has just been published. It shows that Jan. 1, 1910, there were 130,553 certified insane, while on Jan. 1, 1911, there were 133,157—an increase of 2,604 as compared with an increase of 1,776 in the previous year. Compared with the total population, the ratio of the insane per 10,000 was 36.4 on Jan. 1, 1911; 36.1 in 1910, and 36.02 in 1909. These figures appear to show an increase in the prevalence of insanity, but on considering the ratio of first admissions, per 10,000 of the population, the results are more assuring. These are the best index of the increase or the decrease of insanity. The number of first admissions rose from 4.99 per 10,000 in 1901 to 5.26 in 1902, and then steadily fell to 5.16 in 1906, rose to 5.19 in 1907, and remained at the same figure in 1908, then fell to 5 in 1909, and still further to 4.96 in 1910. Thus it appears that the increasing figures of those certified insane is the result of such factors as accumulation from diminishing death- and recovery-rates and probably more frequent certification of recurrent cases of insanity. During the year 1910 the recovery-rate of the insane was 34.1 as compared with an average recovery-rate for the decade 1901-1910 of 36.49.

Sleeping-Sickness in Nyassaland

Sir David and Lady Bruce and the other members of the Sleeping-Sickness Commission appointed by the Colonial Office, under the auspices of the Royal Society are engaged in a most important investigation of sleeping-sickness in Nyassaland. Up to date, fifty-nine cases of trypanosomiasis have been found, and medical officers consider that at present they are unable to discover more than 10 per cent. of the cases in existence. The fly in this country is the *Glossina morsitans*. It has never been scientifically proved that this species is a carrier of the disease, and to prove or disprove this is the chief object of the commission. Sir David Bruce will, in addition, endeavor to discover what connection, if any, exists between wild game and trypanosome diseases in man and domestic animals. Wild animals will be shot, and their blood injected into suseeptible animals, such as dogs, rats, goats, and guinea-pigs, in order to find out whether the blood of wild animals contains the harmful parasites. It is also desired that the commission should determine whether tsetse flies are naturally infected with disease germs. A number of flies from the fly country will therefore be allowed to feed on animals selected for the purpose of experiment; if disease germs are then found in the blood of these animals it will prove that flies are so infected. Sir David Bruce has already proved that several varieties of game common in Nyassaland can become reservoirs of the trypanosome which causes sleeping-sickness, and so become both permanent sources of infection and a means of spreading the disease. More recently Tante, in Uganda, has been successful in transmitting sleeping-sickness by means of the *Glossina morsitans*. Already experiments there are tending to confirm the belief, so long held, that this species of the tsetse is an agent in the transmission of the trypanosome. If this be proved, some means may be found for limiting the spread of the fly—or better still, for its extermination. It is to be hoped, too, that the commission will find some cure, or at least alleviation, for the at present mortal disease.

PARIS LETTER

(From Our Regular Correspondent)

PARIS, Feb. 2, 1912.

Aid for the Beyrouth Medical School

Prince Roland Bonaparte, who is a member of the Académie des Sciences, has presented $7,000 (35,000 francs) to the Faculté catholique et française de médecine de Beyrouth. The Académie des Sciences had desired to aid the Beyrouth school and had considered the question of donating to it the arrearage of the Desbrousses fund intended to be employed by the Institut de France in the interests of letters, arts and sciences. But it was doubtful whether this proposition would be ratified by the other academies of the institute. Prince Roland Bonaparte's gift has solved the difficulty.

Mental Anorexia in an Infant

On January 26, Dr. Buffet-Delmas of Poitiers reported before the Société médicale des hôpitaux de Paris an observation on a boy aged twenty-two months, who after normal development suddenly refused all solid or liquid food. He was with difficulty coaxed to nibble some morsels of bread and to suck a moistened sponge. He soon became frightfully thin and forced feeding had to be employed for three consecutive years. There were as many as 2,505 gavages given. It was only at the end of this period of time that the child consented to feed himself normally. At present he is entirely cured.

Dr. Jean Hallé of Paris reported the case of an infant aged 9 or 10 months which also manifested an invincible repugnance for all kinds of nourishment. The child was at first fed by gavage and then separated from its parents and put in charge of a nurse, after which it soon began to accept a little food from a spoon or a glass, and little by little artificial feeding was supplanted by natural. At present the child, now aged 5, is in very good health.

Appeal of the Suspended Students

The superior council of public instruction has just rejected the appeal of the students suspended by the council of the University of Paris for their share in the riots at the Faculté de médecine last December.

The Commission on Medical Instruction

A superior council of medical instruction, under the presidency of the minister of public instruction, has just been authorized. It will consider all questions laid before it by the minister, for which purpose it will meet twice a year, but may be summoned for extraordinary sessions by the minister. Every member has the right, in or out of session, of submitting to the minister propositions or resolutions on questions within the province of the commission.

A New Laboratory of Radiology and Electrotherapy

The prefect of the Seine has undertaken the erection at Paris of a departmental laboratory of radiology and electrotherapy, especially for the treatment of patients of the suburbs. There is now at the Salpêtrière a municipal institute of electrotherapy but it is not open to patients from

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the suburbs, and is insufficient even for those from Paris. In some hospitals, the laboratories of radiology, which moreover are presided over by non-medical men, are insufficient. The departmental institute will be established in the northwest of Paris not far from Saint-Denis, which is an industrial center.

BERLIN LETTER

(From Our Regular Correspondent)

BERLIN, Feb. 2, 1912.

Personal

It is rumored that Professor Krückmann of Königsberg has now been called to the chair of ophthalmology, after the refusal of Hess and Axenfeld.

Professor Ehrlich has been elected as an honorary member of the Belgium academy of medicine.

Medical councilor Dr. Frey, one of the proprietors of the well known sanatorium Frey-Dengler, in Baden-Baden, died January 18.

January 26 Dr. Jastrowitz died in Berlin at the age of 72. Jastrowitz was for many years a physician in the well known private sanatorium for nervous diseases, "Maison de Santé," one of the first institutions of that kind in Germany. In later years he was a consultant at Berolinum, an institution for nervous diseases in a suburb of Berlin. He wrote some notable articles in his specialty and had a large practice and was for many years secretary to the Verein für innere Medizin.

Death of the Medical Historian, Professor Pagel

January 31 occurred the death of the renowned medical historian of the Berlin medical university, Professor Pagel, at the age of 61, from an apoplectic seizure. Having risen from very needy circumstances he settled in the workingmen's quarter of Berlin as a practicing physician but continued his historical studies which he had begun during his university course, under the guidance of the renowned historian, Professor August Hirsch. His doctor's thesis treated of the history of the Göttingen medical school in the eighteenth century. Already in the eighties he was appointed by Hirsch as the principal collaborator in the latter's great biographical lexicon. In 1889 he published the "Anatomie des Heinrich von Mondeville." This was the first of his numerous publications of the works of the prominent anatomists and surgeons of the middle ages. There followed the surgery of the same author and the "Chirurgie des Congeinna," the "Concordantiæ des Johannes de Sanct Amando," the "Augenheilkunde des Alcoatim," etc. Pagel distinguished himself as the discoverer of lost or unknown manuscripts, among others that of Gordon on the Theriacum. Aside from the history of medicine, he treated in a number of publications the history of the medical profession and of medical education. Especially are to be noted his book "Introduction to the Study of Medicine," *Einführung in das Studium der Medizin;* "Medizinische Deontologie" in which he gave some excellent instruction in medical ethics; and his "Einführung in die Geschichte der Medizin." In his *Grundriss zu einem System medizinischer Kulturgeschichte,* "Basis for a System of Medical History of Civilization," he undertook to trace, on broad lines, the historical relations of medicine with the other sciences, especially theology and philosophy. Together with Neuburger he published a new edition of Puschmann's "Manual of the History of Medicine." *Handbuch der Geschichte der Medizin,* in which he himself worked as contributor. Also he published a biographical lexicon of distinguished physicians of the nineteenth century and wrote monographs on the development of medicine in Berlin, on the history of the Berlin medical society, etc. It is characteristic of the ethics which he preached that in his medical practice he made no use of his title as professor of the history of medicine. In his later years he was the librarian of the Berlin medical society.

Proposed Assumption of the Organized First-Aid Service by the City Administration

As I prophesied in my last letter objections are arising from all sides against the plan of the Berlin city government (*Magistrat*) to take over the first-aid service. In a session of the large Aerzteverein des Berliner Rettungswesens it was determined that the principle advocated by the municipality of a regular short alternation of physicians had not proved successful at the accident stations, as in them at times, either day or night, frequently no physician and no medical aid had been available. By the new regulation there is danger of very disagreeable competition between practicing physicians. The view was expressed that it was much to be regretted that the opportunity had not been given to the Aerzteverein, the "medical union," before the announcement of the Magistrat's plan, to express its opinion. The conclusions drawn from the defects of the present system were declared to be incorrect, and the proposed method of appointment according to the length of service was regarded as impracticable and inclined to be detrimental to the interests both of the city and of the medical profession to an equal degree.

Fees for Special Medical Skill

The question often treated by the courts as to whether specially skilled medical men should be permitted to demand a higher fee than is allowed in the medical fee table has again been decided judicially. A noted Berlin surgeon demanded a fee of $200 (800 marks)—a small fee for Americans—for an appendix operation. The father was willing to pay only $75 (300 marks). The court decided in favor of the surgeon, handing down the following opinion: It is generally known that those of the highest medical skill, among whom the plaintiff undoubtedly belongs, regularly demand fees that are higher than the highest allowed by the fee table (Gebührenordnung). Whoever seeks the advice and work of such medical skill must understand that he has to expect to pay unusual fees, and that the fee will correspond to that which is regularly demanded and collected in similar cases from patients in equally good circumstances, for instance from $200 to $250 (800 to 1,000 marks) for an operation. Such a medical authority can furthermore make it a condition that whoever demands his advice and help and takes his very valuable time must be in the position, if he has not previously informed himself in regard to the question of fees, to pay that fee which other patients are accustomed to pay in similar cases to surgeons of the reputation of the plaintiff, or at least the highest fee which the fee table accords to his position and means.

The Right to Operate on Minors

According to the law and many decisions of the highest German court, the imperial court (*Reichsgericht*), an operation on a minor can be made only with the permission of the parents or guardian—a provision which has often been a fatal one for physicians. A few days ago another case was tried in which a complaint was made against a surgeon for violating this provision. In this case the attending surgeon believed that the operation was justified as it involved the continuation of a treatment already instituted by another physician with the consent of the parents. After the case had lasted three years and been decided by various courts, the physician was actually fined by the imperial court, on a claim for damages made by the parents, to the extent of $5,000 (20,000 marks). According to the decision of the imperial court, the surgeon must secure the consent of the parents to an operation. In addition, a personal injury suit was brought against the surgeon. In this case, however, he fortunately was acquitted because his opinion that the operation was justified was accepted, and because the seventeen-year-old patient, by his silence, had given consent to the anesthesia and operation. In the whole matter it appears that we have to do with a fleecing of the surgeon by the parents. Still, the decision given corresponds with the law.

Physicians in the Reichstag

The number of medical delegates in the Reichstag has been reduced to two by the elections which have brought about so great an increase of the social democrats. Especially the retirement of the Berlin physician, Dr. Mugdan, is to be regretted, since in consequence of social and political knowledge he enjoyed great respect from all parties except the social democrats. He was hated by the social democrats because naturally as the choice of the physicians he took a position in opposition to the Krankenkassen which are completely in the hands of the social democrats. This circumstance was the principal reason why he failed of election, for the conservatives were his opponents from political reasons, but the social democrats, who in many cases were allied to the liberals as opposed to the conservatives, were unwilling to give their assistance to return their hated opponent to the Reichstag.

Strike of Students

A quarrel broke out a few days ago between a number of students and Dr. Hasse, professor of anatomy of Breslau, which has led to a strike of his audience. Hasse has been for many years little liked by the students on account of his harsh manner, and unpleasantness has repeatedly been occasioned by it. For this reason, a short time ago, he resigned from the examination committee. It is to be assumed that Hasse, who has already passed his seventieth year, will resign his position in a short time.

The Review of Internal Medicine

The fact that the *Zentralblatt für innere Medizin*, which has been in existence for a number of years, has been for a long time insufficient for the requirements of scientific internists, led the members of the congress of internal medicine to develop a plan to found a new organ which should appear under the auspices of the organized internists of Germany. The plan has been developed and the first number of the organ will be published in a few weeks, under the title the *Zentralblatt für die gesamte innere Medizin und deren Grenzgebiete*, as already mentioned in my letter of January 12, p. 358. The journal which is published by a large Berlin medical publishing house (J. Springer) and is conducted by a committee appointed by the congress (for the present consisting of von Müller of Munich, von Noorden of Vienna, and His and J. Schwalbe of Berlin), will, like the *Chemische Zentralblatt*, contain no original articles but consist exclusively of abstracts. These will cover as completely as possible the whole extent of internal medicine and its allied fields. In this way the new Zentralblatt will be the most comprehensive in the world's medical literature. The annual subscription is to be about $30 (120 marks). The members of the congress for internal medicine receive a discount of 25 per cent. Furthermore the old *Zentralblatt für innere Medizin* will be continued under the leadership of A. Schmidt of Halle, but in its entire contents it will be intended more for the internist who is not engaged in scientific work and for the general practitioner.

Marriages

JAMES W. J. MARION, M.D., Boston, to Miss Jean C. Cartwright of Nantucket, Mass., at Colorado Springs, Colo., Dec. 28, 1911.

JAREZ C. CASTO, M.D., to Mrs. Charlotte Elizabeth Planck, both of Sedalia, Mo., at Okmulgee, Okla., January 22.

CHARLES MOORE BURROWS, M.D., Albion, N. Y., to Miss Elizabeth Belle Moore of Lyons, N. Y., February 7.

BENJAMIN T. NYE, M.D., Williamsburg, Ky., to Miss Amanda Ward, at Jeffersonville, Ind., January 26.

W. D. MCCLUNG, M.D., to Miss Louise Kirby, both of Richwood, W. Va., at Baltimore, February 6.

ARCHIE BURT CHAPPELL, M.D., to Eveline Frances Morrison, both of Middletown, N. Y., February 3.

CASSIUS M. KETCHAM, M.D., to ELIZABETH HALL, M.D., both of Carthage, Mo., February 7.

ARTHUR J. BOYD, M.D., to Miss Rhue Croxton, both of Nocona, Tex., February 1.

Deaths

Arthur Norreys Worthington, M.D. McGill University, Montreal, 1886; colonel in the Canadian Army Medical Corps, with distinguished service during the Riel rebellion, and also a veteran of the Boer War and several times mentioned in despatches; afterward in charge of Canadian Field Hospital, No. 10; surgeon major of the Fifty-Third Regiment, Sherbrooke, Que.; made lieutenant-colonel in 1907 and placed on the reserve list with the honorary rank of colonel in 1911; for two terms a Member of Parliament for Sherbrooke County; died at his home in Sherbrooke, February 7, aged 49.

Harry Fretts Atkinson, M.D. Rush Medical College, 1891; Jefferson Medical College, 1892; a member of the American Medical Association and a trustee and member of the staff of the Cottage State Hospital, and local surgeon for the Baltimore and Ohio Railroad at Connellsville, Pa.; president of the board of health; died at his home, February 7, from the effects of a gunshot wound of the brain, self-inflicted, it is believed, with suicidal intent, aged 46.

Sidney Sigmund Graber, M.D. New York University, New York City, 1888; a member of the New York Medical Association and New York Academy of Medicine; associate surgeon to the Woman's Hospital in the State of New York; attending gynecologist to the Lebanon Hospital and chief of clinic of the Presbyterian Hospital Dispensary, New York City; died at his home February 8, from heart disease, aged 51.

Isaac T. Van Ness, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1871; a practitioner of Neola, Ia., for thirty-two years; died at the home of his daughter in Council Bluffs, Ia., February 6, aged 65.

Henry Jasper Winn, M.D. University of Pennsylvania, Philadelphia, 1858; assistant surgeon of the Tenth Alabama Infantry, C. S. A. for two years, and during 1864 and 1865 in charge of the Confederate Hospital, Montgomery, Ala.; health officer of Birmingham and Jefferson County for four years and at one time president of the Alabama Board of Health; died at his home in Staunton, Va., Nov. 16, 1911, from dysentery, aged 74.

Charles B. Raines, M.D. Louisville (Ky) Medical College, 1871; a member of the State Medical Association of Texas and a Confederate veteran; a pioneer settler of Palo Pinto County; one of the commissioners appointed to arbitrate with the hostile Indians soon after the settlement of that county; died at his home in Mineral Wells, February 4, aged 65.

Inalee Hopper Berry, M.D. Cornell Medical College, New York City, 1899; visiting physician to the German Lutheran and Metropolitan hospitals and the Northern Dispensary; surgeon to St. Elizabeth's Hospital and instructor in surgery in the Post-Graduate Medical School and Hospital; died at his home in New York City, January 30, aged 40.

Gustave A. Mueller, M.D. Hahnemann Medical College, Chicago, 1885; homeopathic member of the Pennsylvania Bureau of Medical Education and Licensure; a member of the staff of the Pittsburgh Homeopathic Hospital; died in that institution, February 9, from typhoid fever, aged 48.

Lewis Slocomb Horton, M.D. College of Physicians and Surgeons, New York City, 1862; who retired from practice sixteen years ago and lived alone with his son in Brooklyn, was found dead in the kitchen of his home, February 5, from asphyxiation by smoke, and burns, aged 76.

Edward Harley Buckland, M.D. Medico-Chirurgical College of Philadelphia, 1891; a member of the Medical Society of the State of Pennsylvania and recently a practitioner of Springfield, Mass.; died in Philadelphia, January 21, from cerebral thrombosis, aged 69.

Martin Hektoen, M.D. Rush Medical College, 1899; for more than twelve years assistant physician at the Kankakee (Ill.) State Hospital and for some time past night physician in that institution; died at his home in Hospital, January 29, from pneumonia, aged 43.

Rensselaer Ottman, M.D. Albany (N. Y.) Medical College, 1884; surgeon of volunteers throughout the Civil War; for sixty-three years a resident of Carbondale, Pa.; died at the home of his daughter in that city, January 29, from senile debility, aged 91.

Atwood E. Jacobus, M.D. College of Physicians and Surgeons, New York City, 1884; was found dead in his room in Newark, N. J., from the effects of cyanid of potassium, self-administered, it is believed, with suicidal intent, while despondent, aged 52.

William Shedd Richardson, M.D. Harvard Medical School, 1884; a member of the American Medical Association; a practitioner of Marlboro, Mass., for twenty-seven years; died suddenly at his home, February 8, from heart disease.

John P. Hecht, M.D. Jefferson Medical College, 1880; of Somerville, N. J.; a member of the American Medical Association; died suddenly in the operating room of the Somerset Hospital, Somerville, from heart disease, aged 54.

Fred Aldelle Beebe, M.D. University of Wooster, Ohio, 1877; for several years a contract surgeon in the Army and later proprietor of a sanatorium at Corry, Pa.; died at his home January 29, from heart disease, aged 65.

Thomas Patrick Coan, M.D. Johns Hopkins Medical School, Baltimore, 1910; resident physician at the New York Foundling Hospital; died in the Presbyterian Hospital, New York City, February 3, from pneumonia, aged 25.

Hamilton De Graw, M.D. Albany (N. Y.) Medical College, 1855; who, after ten years of practice, retired and became a banker in Brookfield, Mo.; died at his home in that city, February 1, from senile debility, aged 95.

John L. Moore, M.D. Atlanta (Ga.) Medical College, 1868; a member of the Medical Association of Georgia and a surgeon in the Confederate service during the Civil War; died at his home in Griffin, February 3, aged 74.

James H. Easley (license, Iowa, practitioner, 1886); a veteran of the Mexican and Civil wars and for nearly half a century a resident of Hamburg, Iowa; died at his home January 25, from senile debility, aged 89.

William Henry Tallmadge, Jr., M.D. Jefferson Medical College, 1905; of New York City; died at the home of his father in Stamford, Conn., February 7, from the effects of an accidental gunshot wound, aged 34.

Henry K. Whitford, M.D. Eclectic Medical Institute, Cincinnati, 1861; for sixty years a practitioner of Elgin and Chicago; for many years professor of principles and practice of medicine in his alma mater; died at his home in Elgin, February 15, from senile debility, aged 82.

George L. Wentz, M.D. University of Pennsylvania, Philadelphia, 1892; of Drifton, Pa.; died in the Germantown Hospital, Philadelphia, January 25, after a surgical operation on the stomach, aged 45.

Lewis P. Bailey, M.D. Jefferson Medical College, 1853; surgeon in the Confederate service during the Civil War; died recently at his home in Scottsburg, Va., and was buried January 20, aged 72.

E. H. Kies (license, Sixth Judicial District Board, Texas, 1886); a member of the hospital corps of the Army during the Civil War; died at his home in Paris, Tex., recently, from asthma, aged 71.

Arthur M. Walkup, M.D. College of Physicians and Surgeons, Baltimore, 1881; a member of the Medical Society of Virginia; died at his home in Gala, January 31, from cerebral hemorrhage.

Christopher Columbus Clear, M.D. University of Alabama, Mobile, 1885; a member of the Medical Association of the State of Alabama; of Noland; died at Gordo, Ala., January 30, aged 60.

John Howard Evans, M.D. University of Pennsylvania, Philadelphia, 1871; formerly a police surgeon of Philadelphia; died at his home in that city, from cerebral hemorrhage, February 7.

Joseph H. Scott, M.D. University of Louisville, Ky., 1855; for many years a practitioner of Kentucky and Texas; died at his home in Louisville, Ky., February 5, from nephritis, aged 79.

Joseph Linn Hetzel, M.D. Bellevue Hospital Medical College, 1891; a member of the Connecticut State Medical Society; died at his home in Southport, February 3, from pneumonia, aged 49.

Harry Waterhouse Oliver, M.D. George Washington University, Washington, D. C., 1911; of Washington; died in the George Washington University Hospital, January 26, aged 25.

Franklin A. Strong, M.D. Castleton (Vt.) Medical College, 1857; a practitioner of Brewerton, N. Y., for more than half a century; died at Southern Pines, N. C., February 3, aged 78.

Henry C. Wheeler, University of Nebraska, Lincoln, 1893; formerly city physician of Webster City, Ia., but more recently of Cleveland, Okla.; died recently in that city, aged 70.

John Rule Fritts, M.D. Kentucky School of Medicine, Louisville, 1875; a surgeon of volunteers during the Civil War; died at his home in Mexico, Mo., February 1, aged 71.

John Milton Gallery, M.D. University of Michigan, Ann Arbor, 1883; died at his home near Eaton Rapids, Mich., February 5, from cerebral hemorrhage, aged 54.

Anthony J. Moore, M.D. Maryland Medical College, Baltimore, 1900; of Philadelphia; died in St. Joseph's Hospital in that city, February 5, from pneumonia, aged 35.

Benjamin G. White, M.D. University of Tennessee, Nashville, 1884; for eight years sheriff of Conway County, Ark.; died at his home in Morrillton, February 4.

Elisha T. Schwilk, M.D. New York Homeopathic Medical College, New York City, 1899; of Albany, N. Y.; died in a hospital in Poughkeepsie, N. Y., January 9.

Thomas Henry Thornton, M.D. Queen's University, Kingston, Ont., 1870; died at his home in Consecon, Ont., Nov. 24, 1911, from cerebral hemorrhage, aged 69.

John W. Harvey, M.D. Medical College of Indiana, Indianapolis, 1893; a veteran of the Civil War; died at his home in Russellville, Ind., January 13, aged 78.

Isabel Pridham Haywood (license, Mass., years of practice, 1894); a practitioner for thirty-six years; died at her home in Lynn, Mass., January 27, aged 73.

George Franklin McClendon, M.D. University of Nashville, Tenn., 1895; of Hot Springs, Ark.; died at the home of his brother in that city, February 4.

Walter S. Glover, M.D. University of Missouri, Columbia, 1855; died at his home in Jefferson City, Mo., January 25, from senile debility, aged 79.

Hampton Stokes (license, years of practice, Illinois, 1877); a pioneer practitioner of White County; died at his home in Carmi, January 1, aged 70.

Charles Liessmann, M.D. Bennett Medical College, Chicago, 1901; died at his home in Chicago, February 7, aged 51.

William E. Chalstran, M.D. Keokuk (Ia.) Medical College, 1898; of Galesburg, Ill.; died recently and was buried at Galesburg, January 31.

Levi Potter, M.D. Queen's University, Kingston, Ont., 1870; died at his home in Bowmanville, Ont., January 11, from pneumonia, aged 69.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

CONVICTIONS UNDER FOOD AND DRUGS ACT

Reports of a Few More Frauds that the Government has Recently Exposed

FERRO-CHINA ANTIMALARICO

"Ferro-China, the Anti-Malarie Febrifuge, Upbuilder, Digestive and Strengthening Tonic," was shipped in interstate commerce by A. Saunig & Co. It was said to be prepared from the "best quality of quinin" and was sold as a "cure and preventive of malaria." On analysis, the stuff was found to contain no quinin but it did contain over 16 per cent. of alcohol. The government naturally charged that it was misbranded. The defendants pleaded guilty and were fined $50. [*Notice of Judgment No. 1222.*]

WELLS' HAIR BALSAM

This preparation was made and sold by E. S. Wells, Jersey City, New Jersey. It was said to be "a vivifying tonic" and the further assertion was made that "it is not a dye nor does it contain anything harmful to the hair or scalp." When analyzed by the government chemists, it was found to be a perfumed mixture of sulphur in a watery solution of lead acetate (sugar of lead) and glycerin. The stuff was declared misbranded, first, because it was called a balsam, which it was not; second, because it was said not to be a dye, when it was, and third, because it was labeled harmless, when it was poisonous. Wells pleaded non-vult and, for some reason not evident in the government report, the court, instead of imposing a fine, suspended sentence. [*Notice of Judgment No. 1228.*]

LAXATIVE BORO PEPSIN

The Senoret Chemical Co., a St. Louis nostrum house, manufactured a product which it fancifully called Laxative Boro Pepsin. The government declared the stuff misbranded because the name would naturally lead the purchaser to believe that the preparation possessed the therapeutic and medicinal properties of boron and pepsin, when, as a matter of fact, it contained neither substance in quantities that could be appreciated by chemical tests. It was further declared misbranded because it did not contain the amount of alcohol given on the label. The Senoret Chemical Company pleaded guilty and was fined $10 and costs. [*Notice of Judgment No. 1232.*]

KENNEDY'S WORM SYRUP, CHERRY BALSAM AND HERCULINE TONIC

These three products were made and sold by the Dr. David Kennedy Company, Rondout, New York. The "Worm Syrup" was sold as a "perfectly harmless" preparation that "cannot do the least harm." Analyzed by the government chemists, it was found to be a solution of santonin (partly deposited), sugar and oil of anise in a mixture of water and alcohol. The Bureau of Chemistry naturally held that the claims that the preparation was harmless were false and misleading and the product thereby misbranded. The judge, however, apparently believing that the study of law qualified him to express an opinion on the toxicity of drugs, asserted that he did not believe that the preparation was harmful merely because it contained santonin. He therefore suspended sentence in this instance, even though the manufacturer pleaded guilty to the offense.

"Cherry Balsam" was a "consumption cure" put out by the same company and was labeled a "harmless" preparation. When examined by the government chemists, it was found to contain alcohol, opium, bitter almond oil and sugar. The stuff was declared misbranded, first because it did not contain any cherry balsam and, second, because a mixture of opium and alcohol can hardly be declared harmless. The defendant pleaded guilty and was fined $100.

"Herculine Tonic" was a nostrum of the cure-all type that was said to have been discovered by David Kennedy, M.D. It was sold under the lying claim that it is "universally endorsed and prescribed by the medical profession." The therapeutic claims made were equally false. Analysis made by the Bureau of Chemistry showed it to have, essentially, the following composition:

Alcohol	16.00 per cent.
Quinin	0.065 per cent.
Sugar	19.98 per cent.
Water, glycerin and undetermined matter.	64.765 per cent.

Herculine Tonic was declared misbranded because the percentage or volume of alcohol was not stated on the label. The company again pleaded guilty and was fined $100. [*Notice of Judgment No. 1234.*]

FORMAMINT

The So-Called Germ-Killing Throat Tablet

Formamint tablets have recently been put on the American market by the same concern that exploits Sanatogen, the "food tonic" or "tonic food"—according to whether one reads European or American newspapers. Formamint tablets are being introduced to the American public by that cheapest of all methods of advertising "patent medicines," through the medical profession. It is not advertised in American newspapers or lay magazines—at present. For some years this product has been advertised in newspapers and other periodicals in Europe under such claims as the following:

"Formamint shields humanity against infectious disease."

"Cures and prevents sore throat."

"The dangers of infection from diseases like diphtheria, scarlet fever, measles, tonsillitis, sore throat, mumps, etc., have now been reduced to an absolute minimum. This is due to the discovery of Wulfing's Formamint—the 'germ-killing throat tablet'."

"Cleanses the mouth and throat from disease germs as easily and rapidly as dirt is removed from the skin."

"Formamint will certainly prevent diphtheria."

"Quickly render the whole mouth and throat thoroughly antiseptic."

"Formamint destroys these [diphtheria] germs so rapidly that when a physician mixed a little Formamint with water and added it to the germs taken from the throat of a patient dangerously ill with diphtheria they were all killed within ten minutes."

Such are some of the claims by which Formamint goes to the European public. Doubtless it will be only a matter of time when the required number of testimonials from American physicians are forthcoming when we may expect to find the newspapers of this country heralding through their advertising pages the fact that Formamint is "recommended by thousands of American physicians." The medical journals that are lending their pages to this preliminary advertising campaign are the following:

New York Medical Journal	*American Journal of Clinical Medicine*
Medical Record	
American Medicine	*Medical Review of Reviews.*

How much longer will the medical profession permit itself to be used as an unwitting agency for the exploitation of "patent medicines"? The game has been worked so often that it has become transparently thin. It is evidently not worn out, however, or shrewd nostrum promoters would not waste their time or money on it. That it should still be considered workable is complimentary neither to the standard of advertising ethics of medical journals that accept the Formamint advertisements nor to the intelligence of the members of the medical profession who will "fall for it."

Miscellany

Imagination in Medical Research.—Many have heard of the two students who reported on the same patient in competition for a clinical prize. The patient presented, among other symptoms, a remarkable discoloration of a certain area of skin, and the first student described this discoloration with the most careful minuteness. He measured it in different directions and drew a rough sketch of its general outline. The second observed the phenomenon with equal care, but he exercised his imagination and formed a hypothesis which he proceeded to bring to the test of experiment. He asked a nurse for a wet towel, with which he wiped the discoloration away. It is evident that the faculty which he thus brought to bear on the problem before him would be likely to stand him in good stead in relation to many others of a more complicated character; and that his exercise of the art of diagnosis would be practically immune from the errors incidental to the habit of taking all appearances at their face value. Imagination at once points to the possibility of more than one explanation of any given occurrence, or alleged occurrence, and compels inquiry as to the existence of probable causes beyond the particular one which may at first sight appear to have been in operation. . . .

To take the most important and most conspicuous of modern examples, it was imagination that first pointed to the mosquito as an agent in the conveyance of disease to man. Dr. (now Sir) Patrick Manson was in practice at Amoy, and his attention was called to the occasional presence in the blood of the natives of the minute larval filaria which had been discovered by Bancroft and called after his name. This was seen under the microscope as a motile thread about 0.3 mm. in length by 0.008 mm. in diameter, completely enclosed within a capsule, and present in the blood in millions, but occasioning no apparent symptoms. Dr. Manson employed Chinese hospital assistants to obtain blood-smears from as many natives as possible in order to ascertain the degree of frequency of the creature among the population. One of his blood collectors was greatly more successful in obtaining the filariæ than others, and inquiry showed that his specimens of blood were taken chiefly in the evening. Further inquiry showed that the filariæ swarmed in the evening in the blood of the superficial vessels of those of their bearers who worked by day and rested at night, and that they swarmed in the morning in the superficial blood of those who reversed this process, such as watchmen and other followers of night industries. A post-mortem examination of a day worker who died suddenly in the morning showed the lungs, the heart and great vessels to contain millions of filariæ, while the superficial vessels were free from them; so that their usually nocturnal migration to the surface was presumably due to changes produced in the blood by fatigue. Why should this migration occur?

Dr. Manson brought his imagination to bear on the problem, and it suggested to him that the filariæ were parasites requiring the intervention of a second host in order to enable them to reach their next phase of existence, and that their nocturnal migration pointed to this host as being a nocturnal creature of blood-sucking habits. Among such the mosquito presented itself for inquiry, and a Chinaman infested by filariæ was hired to spend a night with a selected company of the insects. In the morning they were captured, gorged with his blood, and by dissections conducted in successive days the filariæ were seen to pass through the next stages of their existence in the muscles of the insect, and to return to the extremity of the sheath of its proboscis, ready to be deposited on the surface of the next human victim in the immediate vicinity of the puncture, and to make their way through the skin to his lymphatics prepared to undergo complete development into nematoid worms and to propagate their kind.

So far all that was done was to elucidate the growth of the parasites which produce lymphatic varicosities and elephantiasis; but shortly afterward Laveran discovered the parasite of malaria. Dr. Manson's imagination at once took fire, and he pointed out that, in all probability, a mosquito

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was the instrument of its conveyance to mankind. Unable to pursue the investigations himself, he explained his views to Major (now Sir) Ronald Ross, to whom he also imparted the technic of mosquito dissection which he had himself employed, and who, after much patient and laborious research, was able three years later to confirm what Dr. Manson had suggested, and thus to establish on a sure basis a discovery which will ultimately lead to the extirpation of a large group of serious or fatal diseases, and may rank with the discovery of anesthetics or of aseptic surgery.—*Lancet*, London.

The Chicago Medical Society and Criminal Abortion.—The criminal abortion committee of the Chicago Medical Society has made a report (published in the *Bulletin*, Jan. 13, 1912), outlining the proposed work for the year as follows: education of the members and public as to the status of criminal abortion in Chicago; active support of members of the profession subjected to danger from blackmail or unjust court proceedings when called to treat a case in which criminal abortion has been attempted; securing the active cooperation of hospitals and physicians in giving publicity to those engaged in doing abortions; cooperation of the coroner's office and the state's attorney's office; stimulation of the interest of the society in using every effort to clear up the ranks of the profession and expel offenders; addresses to interns and nurses in the large hospitals; calling attention to the aid which may be given to the committee and the legal authorities; an evening public lecture course conducted by the propaganda committee. Cooperation with the coroner and state's attorney have been promised. Notwithstanding the difficulty of securing a legally binding dying statement the committee has been successful in every case in which the patient was reached in time. It has been found that superintendents, interns and nurses in hospitals put obstacles in the way of clearing up investigations, being under the impression that attending men must be protected. Some hospitals evade responsibility in this matter by refusing admission to patients on whom abortion has been practiced. The committee expects to convince the hospitals that it is their duty to assist in the investigation of such cases. This will tend to deter those who might otherwise be tempted to engage in the practice. The state's attorney has furnished the committee with a form of dying statement which, it is believed will withstand the tests of courts. The committee finds that newspapers are willing to criticize the medical profession on account of abortion but do nothing to aid in suppressing the evil.

Culture of the Bacillus of Rat Leprosy.—Since the cultivation of the *Bacillus lepræ* in symbiosis with amebas and the cholera vibrio, Hollmann (*Public Health Reports*, Jan. 19, 1912) has attempted by the same method to cultivate the acid-fast bacillus found in the lesions of rats suffering with rat leprosy. The amebas used were taken from a guinea-pig and grown in symbiosis with cholera vibrios, isolating and growing in "pure mixed" culture by the method of Musgrave and Clegg. Five-day-old cultures were inoculated with blood taken from the heart of a rat which was a descendant of a rat inoculated with leprosy in 1909. Smears from the lesions, as well as from the heart-blood, showed numerous acid-fast bacilli. Transplants were made to new culture media and in the ninth generation attempts were made to separate and grow the acid-fast bacillus in pure culture. This was done by heating the mixed culture of amebas, cholera vibrios and the acid-fast bacilli for 30 minutes at a temperature of 62 C., which killed the cholera vibrios and amebas. Cultured for a period of twenty-one days, distinct colonies were observed. White rats were inoculated subcutaneously with a suspension of these cultures and from rats dying at different dates afterward the acid-fast bacilli were recovered from inflammatory lesions or abscesses. Guinea-pigs inoculated with the same suspension of acid-fast bacilli proved negative after 197 days.

Differentiation of Typhoid and Brill's Disease (Typhus Fever).—As mentioned in a recent editorial (THE JOURNAL, Feb. 10, 1912, p. 414), Anderson and Goldberger believe that Brill's disease is identical with the typhus fever or Europe and the tabardillo of Mexico. Inasmuch as the disease, prior to the description by Brill in 1908, was often diagnosed as typhoid and was, no doubt, regarded as an infection due to the colon group of bacilli, a comparison of the symptoms of the two diseases in the light of more exact knowledge concerning Brill's disease will be of interest. As compared by Brill (*Am. Jour. Med. Sc.*, April, 1910), they are as follows:

TYPHOID	BRILL'S DISEASE—TYPHUS FEVER
Usually long incubation.	Short incubation, four to five days.
Onset not commonly abrupt.	Commonly with chill or chilly sensation.
Fever; gradually increasing ascent of temperature to fastigium—in all, about 10 days.	Fastigium reached in three days.
Remissions of temperature occasionally more than a degree.	Rarely more than 1 degree.
Fall usually by gradations to normal, taking commonly one week.	Fall commonly by crisis, not longer than 60 hours.
Eruption, circumscribed, lenticular, papular.	Maculopapular, periphery indistinct and irregular.
Distribution, chiefly, back, and abdomen, seldom appearing on upper and lower extremities; almost unknown on palms and soles.	Distribution in addition to trunk on upper and lower extremities not infrequent, on palms and soles occasionally.
Eruption appears in crops throughout the disease.	Does not appear in crops.
Spots rarely confluent, and then confluence of but two spots.	Confluence may occur with three or four spots forming a number of patches.
Roseola disappearing on pressure.	Erythema, not disappearing on pressure.
Petechial spots (hemorrhagic) very rare.	Petechiæ occasionally.
Apathy and prostration late in development.	Apathy and prostration early.
Labial herpes rare.	Labial herpes in 6 per cent. of the group.
Diarrhea fairly common.	Constipation an almost invariable accompaniment.
Hemorrhages from the bowel often observed.	No intestinal hemorrhages or blood in feces.
Headache disappears in second week.	Is more intense and lasts throughout the disease.
Relapses observed by all observers.	Relapses have never occurred.
Widal reaction positive in over 95 per cent. of the cases.	Widal reaction invariably absent.
Blood cultures positive in over 90 per cent. of the cases.	Blood cultures invariably negative.
Convalescence slow.	Convalescence speedy.

Agar in the Treatment of Constipation and Diarrhea.—The use of agar in constipation was suggested by Adolph Schmidt in 1905. The experience of Dudley Roberts (*International Clinics*, 1911, iv) has convinced him that its use is an important advance in gastro-intestinal therapy. Cellulose, in any of its forms, relieves constipation by increasing the bulk of the feces and stimulating peristalsis, but agar is unique among the forms of cellulose. When allowed to soak for an hour it takes up twenty times its weight and five times its bulk of water. It has practically no odor or taste and when ingested causes scarcely any discomfort, and is in no way irritating to the intestine. When taken for constipation it stimulates peristaltic activity by its bulk but no habit is established and when the evacuations become regular it may be discontinued. Daily ingestion produces characteristic soft and well-formed stools of considerable caliber. The feces are not sticky but do not break up easily and do not tend to collect in the lower bowel. Agar undergoes no apparent change in the intestinal tract except to take up water, neither fermentation nor decomposition occurring. The feces lose their putrefactive odor and the bacterial flora of the intestine are reduced in numbers, and absorption of putrefactive products is lessened. In a few weeks there is a decidedly lowered bacterial content in the feces. Agar is not useful in constipa-

tion due to all causes, among which may be mentioned abnormalities of the anus, dilatation of the rectum and weakness of the abdominal musculature, or when it is due to a purely psychic inhibition. In constipation resulting from a highly refined diet with resulting fine residue, agar is useful; also in spastic constipation, which is met with in neurotics, the undernourished and the underfed. In constipation due to deficient peristalsis, dilatation behind angulations and constrictions of an organic or spastic nature, the results vary widely. When successful there is a decided change in the toxic evidences of fecal stasis. In some patients with regular evacuations who complain of symptoms of auto-intoxication or intestinal putrefaction, agar does good. It is valuable in the constipation of infants and children and Roberts has seen a broad field of abnormalities in children relieved by the addition of agar to the diet. In the treatment of long-continued diarrhea, trouble is experienced in the evacuation of the bowel when the stools become solid on account of the flaccidity of the rectum. The soft and bulky feces produced by the agar help to restore tonicity to the rectal musculature. Fecal stasis is prevented and outbreaks of diarrhea from irritation of the mucosa are obviated. In some cases of mucous colic and membranous colitis, the effects of the addition of agar to the diet are remarkable. Roberts has found the dose to be four to eight teaspoonfuls. Adults like the finely cut agar, while children take the ground variety in cereals without objection. It may be taken dry from a spoon and washed down with fluid, but as a rule, is taken better with vegetables, cereals and cooked fruits or with thick sauces. It may also be mixed with the dough of cakes, biscuits and cookies just previous to baking.

New Uses for the Urinometer.—According to a descriptive folder accompanying a urinometer bought by an eastern physician in a wholesale drug-store, the urinometer has many uses not hitherto suspected by the medical profession. In the scientific information given, this circular equals the "circular around the bottle." Here it is:

"A DESCRIPTION OF THE URINOMETER

"This small instrument is intended to ascertain the strength of acidity of the Urine and thereby determine the comparative health of the body, particularly with reference to the order called Diabetes, or the involuntary discharge of Urine.

"The graduated side of the scale is marked with degrees, by which the comparison may be made on the reverse side; at the upper part is marked the letter W, being the point at which the instrument rests when immersed in pure water. The next division, marked by the letter H, is the point at which it rests when immersed in Urine when the body is in good health; the letter S is marked to signify strong, but a less degree of health; and the last division, the point at which the instruments rests when disorders of the Diabetes have taken place, and its progress may be ascertained by the surface of the fluid marking an increased degree on the scale."

Method of Handling the Cholera Situation in New York.—The appearance of cholera among immigrants arriving in New York in June and July, 1911, stimulated quick and vigorous efforts on the part of the health authorities at that port and the New York state department of health, assisted by some of the members of the Public Health and Marine-Hospital Service. In addition to the strict quarantine and isolation of patients with cholera and the passengers of the boats on which they arrived, all subsequent arriving immigrants were examined at the quarantine station up to the close of quarantine, November 19. In carrying out this work two points were observed very thoroughly—a complete bacteriologic investigation and rapidity, so that passengers should not be held in quarantine for more than one day. The general method of procedure after a little experience was as follows: The arriving vessel was boarded by the regular boarding officer at the quarantine station and routine inspection made. On small yellow cards, the name, sex, manifest number, ship's name and date, were placed for each passenger. The director of the state laboratories then boarded the ship with tubes of culture media carried vertically in wire baskets covered with gauze, but the tubes not plugged. The passengers were then brought to him as rapidly as possible and the following procedure observed: The director was seated on a stool with the tubes of culture media placed on a stool beside him, and the stock of sterile swabs also at hand for taking rectal samples. Each passenger, with his clothing previously loosened and prepared, was told to bend over the back of a chair placed before the director and the anal orifice thus exposed, the director first entered on the passenger's card, the number of culture tube then to be inoculated, and then, taking the swab in the right hand, by a single motion, separating the left buttock suddenly from the right and at the same moment introducing the swab through the exposed anus, a suitable rectal sample was at once obtained and without the slightest difficulty. The swab, soiled with the fecal matter, was then dropped into the correspondingly numbered culture tube, and the same procedure was continued for the examination of each succeeding passenger. By this method it was found possible to take specimens and inoculate cultures from 265 passengers per hour. These cultures were incubated in the quarantine laboratory. At the end of six hours the surface growth of every such culture was inoculated in a second tube. By improving the method with experience, it was found possible to inoculate 500 subcultures per hour. The subcultures were then incubated another six or eight hours and a drop taken to make microscopic smears. These smears were made in successive numbers of five on microscopic slides, dried in the air, fixed by passing three times through the gas flame, and stained with carbol-fuchsin. In examining the smears it was not found possible for one examiner to report on more than forty smears per hour. A considerable amount of the bacteriologic work was carried on day and night. During this period of four months, the passengers of seventy-seven steamships arriving from ports infected with cholera were examined, with a total of 26,455 persons for primary examination and 458 secondary examinations, making a total of 26,913 examinations of persons and taking of rectal specimens, a total of 26,913 primary cultures, a corresponding number of secondary cultures and approximately 2,000 serial cultures of suspects detained, so that in figuring the total work devolving on the members of the staff, it is fair to say that 27,000 persons were examined and fecal specimens taken; 60,000 cultures were made, with 30,000 microscopic diagnoses. Of 26,455 passengers, examined bacteriologically, 150 were detained for further examination or because of sufficient evidence of their being infected with the vibrion of cholera. Of these 150 detained, twenty-six were proved to be actually infected with cholera vibrions. No passenger showing any evidence of cholera infection was discovered by this cholera investigation after August 18.

Capital-Punishment Versus the Life Sentence.—A "wave of crime" in Vermont in 1911, which resulted in twenty homicides, leads the *Vermont Medical Monthly* to comment on the question of capital punishment. It says that the duty of society is to accomplish the greatest good for the largest number and that in respect to crime this right cannot be safeguarded without severe and summary punishment for those who are guilty. While the infliction of the death penalty is a serious procedure, the reluctance to inflict capital punishment on convicted murderers often results in the loss of innocent lives in exchange for the guilty and worthless criminal. It is said that the lower down we go in the scale of mentality, among the grades of intellectuality which furnish the greatest number of murderers, the greater is the restraint of capital-punishment against these animal tendencies. The abolition of capital punishment removes the strongest motive for restraint. Life sentences have little terror for individuals of this type. Another rather unexpected result of life sentences is found in statistics from Rhode Island in which state capital punishment is not inflicted. From 1838 to 1884 all murderers in Rhode Island except two were sentenced to life imprisonment. The sentences were terminated as follows: One is still serving his sentence; eight died in prison, including one who hanged himself; one became insane but what became of him is not stated; nine-

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teen were pardoned in from three to twenty-one years—quite a number being pardoned after only a few years of imprisonment. It is said that by leniency to these criminals on one plea or another we are adding the further peril of perpetuation of their stock after discharge from prison. This danger has become recognized in a few states like Indiana, which have adopted radical methods for producing sterility by vasectomy. The twelfth census of the United States shows that there were more homicides in Rhode Island and Maine, where murderers are punished by imprisonment, than in all the other New England states, where murderers are punished by death.

The Individual's Experience.—Rhazes, the Arabian philosopher-physician, speaking of physicians, says: "He alone merits your confidence who, having opportunely applied himself to the study of medicine, has frequented able masters and seen much of the sick; who joins to the assiduous reading of good authors his personal observations. For it is impossible to see all, to test everything one's self; and the knowledge, the experience of a single individual, compared with the knowledge, with the experience of all men and of all ages resembles a thin thread of water placed beside a great river."

Correspondence

The Army Canteen

To the Editor:—As an alumnus of Jefferson Medical College, 1886, of which Dr. Keen is emeritus professor of surgery, I wish to register my protest against the stand he has taken in favor of the restoration of the so-called canteen to the army. Most of the points he has raised in favor of the restoration have been successfully answered already, but there are a few points which I wish to take up.

Dr. Keen uses the argument that if the soldier is allowed beer in the canteen it will prevent him from going out to the low saloons and drinking and then frequenting houses of assignation, where he will contract venereal disease. He cannot establish this by logic. Alcohol lessens a man's self-restraint. It benumbs his higher sensibilities. It makes him more reckless. Now, where is the restraining influence of the canteen? I mean to say that the canteen is the recruiting office for the saloon and bawdy house located just outside the camp. The young man who has never known anything about the saloon or house of prostitution can get his first drink in the government canteen. His moral sensibilities are benumbed, his baser appetites are stimulated and he will go outside that he may "have a time." He comes back into camp diseased for life. He never would have fallen but for the initial drink he got in the canteen.

I learned long ago that although "figures won't lie," you can get almost any result with them you want, and so it is with statistics, you can make them prove almost anything.

There are so many things against Dr. Keen's claims and not a single one in favor of them that I desist from mentioning any more save one. The fact that the brewers are in favor of the restoration of the canteen should be sufficient argument against it. Whoever heard of a brewer being in favor of anything that would better humanity?

I want to say I think the medical profession as a body has been most shamefully disgraced by proclaiming to the world that 279 of its membership have memorialized congress to pass the Bartholdt bill. I think it is high time that we who are opposed to it should do some memorializing.

Now we are informed that Dr. George W. Webster's name appeared on the list of 279 without his knowledge, and who knows how many more there are on that list without the consent of the supposed signer? We are told further that Dr. Webster indignantly ordered his name stricken from the list. That he with the rest of us may show our hand and correct the impression that the medical profession is in favor of the restoration of the canteen I nominate George W. Webster, M.D., W. E. Quine, M.D., both of Chicago, C. B. Johnson, M.D., of Champaign, and George N. Kreider, M.D., editor of the *Illinois Medical Journal*, of Springfield, to formulate a plan whereby we may express our indignation at the move made by Dr. Keen.

W. A. WISEMAN, Camargo, Ill.

[COMMENT: We have two remarks to make concerning the above letter.

1. We have omitted from it a portion discussing the wisdom or non-wisdom of the use of alcoholic drinks. We cannot open our columns at present to a discussion of this. The issue concerning the canteen is whether or not its reestablishment will be for the benefit of the soldiers as men and of the army as an efficient fighting force. Practically no one who writes on this question for publication speaks in favor of the use of alcohol as a beverage. All at least seem to agree that the use of alcohol is harmful. The question at issue is: If the soldiers are allowed to buy beer and light wines within the confines of the army's own territory, will the net result be to lessen intemperance and other attendant evils?

2. Our correspondent inquires, in the last paragraph of his letter, concerning the signers of the petition. This question was referred to Dr. W. W. Keen of Philadelphia, who sends photographic evidence on one of the points and writes as follows. We do not consider it necessary to print the photographs.—ED.]

To the Editor:—Dr. George W. Webster of Chicago requested in December that his name should be withdrawn from the petition, and stated that he had "no recollection of ever having signed it." The *Congressional Record* of Jan. 17, 1912, p. 1007, shows that the name of Dr. George W. Webster (which must not be confused with that of Dr. J. Clarence Webster, also of Chicago) does not appear in the official publication of the petition; in other words, as soon as I received Dr. Webster's request withdrawing his name, this withdrawal was made, just before the petition was presented. I have received no other request for the withdrawal of a name, and not a single letter "repudiating" a signature.

That Dr. Webster's recollection was at fault is shown by the accompanying photograph of his letter to me and of his signature at the end of the petition.

The *Watchman* of Boston went so far as to state that Dr. Webster's name was appended to the petition "without his knowledge or consent." The photograph, I take it, is sufficient evidence that this is not the case.

In addition to this the *Watchman* calls attention to a letter of General Fred. D. Grant, dated Jan. 10, 1912, which first fell under my eye at the beginning of this month. In this letter General Grant states that "many times in the past he has recommended the restoration of the canteen," but has now changed his mind. Inasmuch as the petition was written in May, 1911, nearly eight months before the date of this letter, and when presented to Congress, as signatures had been received at various dates, was dated Dec. 4, 1911, it was impossible for me to know at that time that General Grant had changed his views, and yet this later letter is made the basis in the *Watchman* of Boston, for the charge that General Grant had made public a letter in which he says that the use of his name as being in favor of the canteen was unauthorized and exactly reverses his position—a statement which General Grant did not make.

In the original petition, including Dr. George W. Webster's name, there were 275 signatures. Since that time there have been received seven other signatures, the last one only this week, which, deducting Dr. George W. Webster's name, makes the number of signatures at present on file 281.

W. W. KEEN, Philadelphia.

[COMMENT: The above matter was submitted to Dr. Webster and he stated that he did sign the petition, but that he did so without fully understanding it, and later, when his attention was called to the character of the petition and when he had more fully considered the matter, he requested Dr. Keen to remove his name from the petition, with which request Dr. Keen complied. Dr. Webster states that Dr. Keen's conduct throughout has been satisfactory, honest, and honorable, and Dr. Webster denies responsibility for any reports that may have arisen to the contrary.—ED.]

The Management of Normal Labor

To the Editor:—I have just read the correspondence (THE JOURNAL, February 3, p. 458) concerning the article previously published (THE JOURNAL, January 27, p. 274) on "The Management of Normal Labor." After a country practice of thirty years, during which I have kept close watch of the literature on all lines, as is necessary for one so practicing, it is certainly quite amusing to note some of the suggestions made by these critics. I had read the original article when it came out and considered it quite explicit; while it was not exhaustive in its scope, yet it covered the points considered very well. JOHN J. COFFMAN, M.D., Scotland, Pa.

To the Editor:—I do not hesitate to express my surprise that you should have allowed the article on "Management of Normal Labor" to escape your eye—and blue pencil. I was pleased to note, in the following issue, several short but valuable letters concerning the article. What I wish to correct, however, is not the article itself, that having been thoroughly done, but the suggestion of the editor that this twenty-year-old summary was intended "for the country practitioner."

For more than ten years, I have practiced medicine in a western town of less than 2,000 persons, situated in a ranching community. During that time there has not been a death in the town or within many miles of it due to the lack of proper obstetrics, nor one case of serious puerperal sepsis known to me; and news travels far and fast in such communities. Our people have been educated to the idea that puerperal sepsis is a preventable disease, and most often directly chargeable to the obstetrician. We have graduate nurses in attendance in a comparatively small proportion of confinement cases. These being the facts, does it seem that we require such unsurgical advice as was contained in the article referred to?

It should not be forgotten that, while some of us practice in the country, we did not learn our obstetrics there, nor do we depend entirely on our own experience to keep abreast of the times, and it happens, at least in this western country, that the general average of ability appears to be rather above than below that in many large cities. Why the country practitioner should be so commonly looked on as behind the times, and in need of even poor instruction, is beyond my knowledge. He is required, by the absence of real and pretended specialists, to be of more diversified attainments than is his urban colleague; he must have no unexplainable deaths, as is possible in larger communities, where each member knows probably not even the name of his nearest neighbor; his material equipment must be much more complete and extensive than that of the practitioner of the city; among his patients he is usually not able to have such conveniences as are considered necessities by his city brother; still he must, and does, get results.

Looking at the subject then, from this point of view, I register this brief protest against the implied injustice to what we think are our abilities.

M. A. WALKER, M.D., Dillon, Mont.

To the Editor:—I imagine your motto must be "worse and more of it." In THE JOURNAL for February 10, page 429, you have a comment, in which you first apologize for the article on "Management of Normal Labor," in the issue of January 27, and then say that the writer had in mind the country practitioner. Now, do you think that is a fair and just statement? Do you think that the country practitioner is so grossly ignorant of asepsis as to place a culture medium of petrolatum in the parturient canal during labor? Do you think that he is so far behind his city brother that he does not use gloves in all labor cases? Now, if you really meant what you said in your comment, I would ask you to carry your mind back to Danville, Ky., the home of Dr. Ephraim McDowell; he was a country doctor. The immortal O'Dwyer was also a country doctor in New York State. I think that if you look the matter up you will find that all our famous men have at one time been country doctors, and you will then conclude that another "comment" is due the country practitioner. JAMES FARRAGE, Warwick, N. D.

To the Editor:—Allow me to offer you a little first aid. I refer to that unfortunate article on the management of normal labor, in the department of Therapeutics, January 27. The advice was evidently intended for the benefit of the practicians of the small towns and of the country.

First, I would suggest not to blame the doctor if he has not seen the patient until she is already howling in labor. Again, don't blame him if she has fecal accumulations in her rectum, her legs swollen to her body, and a headache of four weeks' standing. Criticism of him is unjust if he find under her buttocks a dirty bed-quilt, under which is spread a six weeks' grey cotton blanket in lieu of a sterile white sheet; no sheet, but a varying number of heavy quilts over the patient; no nurse, just Granny; four women in a close hot room, each woman holding a baby. The women all call him "Doc."

There is no hot water; one tin basin, plastered inside and out with a dark plastic sediment of the foot-wash water of a family of seven children. True, the doctor should always carry a nest of basins with him, but he may be caught without them some time. If he be pushed for time he can remove the eye from the top of the kitchen stove, if there be a fire in it, and literally burn out the filth from the dirty basin by inverting it over the fire. I've done it many a time. The Kelly pad is a ludicrous fake in country practice. The critics of the article will agree with me when they reflect that the average woman in labor is apt to climb the wall backward, or leave the bed entirely and retire to the back of the house to urinate. The Kelly pad is hard to clean, and I can't afford to burn one for every obstetric patient.

Let's grant that the doctor sterilizes his hands and draws on the sterilized gloves, as we all do. He has done the palpation stunt. Then—but I forget the shaving of the pubis! I wish to whisper to the four critics of last week. In about three seconds after the doctor has made the first rake with his safety, he will find himself on his back out in the yard with the imprint of a woman's bare foot emblazoned on his manly chest, the window sash round his neck and a revolving vision of all the stars of the firmament presented to him. Tell him not to try to shave 'em.

None of these conditions necessarily indicates poverty. You may find these disadvantages in the family of a man who owns a half section. Or you may find everything clean in the tenant home of the poorest. But that tonsorial stunt—let it alone. I seldom get to that till after the baby is born, and then I make the excuse that there is the probable perineal tear, and the shaving must be done to prevent "child-bed fever." Don't blame the doctor if he ties the cord jam up against the skin, cuts it a half inch distal to the ligature and bathes it in camphor, instructing Granny to do this every time a napkin is changed, and to keep the antiquated abdominal band off the baby and give it a chance to breathe. This is good surgery and sound advice to Granny, who seldom relishes it.

Don't criticize Doc too harshly if he calls for a glass tumbler with a drop of 'lasses in the bottom of it. He probably wishes to stick a bit of cotton in the glass for a chloroform inhaler. In the South we think chloroform given this way is safe. The patient will let it tumble off as soon as she gets a little drowsy. In the North and East they use ether more. They may be right. S. H. LANDRUM, Altus, Okla.

To the Editor:—I have been much interested in the article on "The Management of Normal Labor" and also in the comments and criticisms on it. I have had a very hard and strenuous obstetric country practice for something over sixteen years, during which time I have attended several hundred deliveries, and I say that normal parturients, attended in the manner described, will not become infected; they will not develop puerperal fever or septic peritonitis.

I came into private practice fresh from a two years' course of training in a well-appointed modern hospital, where we had been carefully taught that infection was the deadly enemy always lying in wait for the obstetric patient. My first obstetric cases caused me a great deal of worry and

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anxiety on account of being in constant fear that my patients would develop sepsis because of their unclean surroundings. They did not, however, and a few years' practice showed me beyond all doubt that the dangers of infection in a country practice are *nil* as compared to what they are in a large city or in a hospital.

The author of this article shows a very thorough knowledge of the dangers that threaten the country obstetric patient, and a good deal of skill is needed in guarding her from them. Not one of his critics said anything about protecting the patient from laceration of the perineum, which is one of her greatest dangers. The danger of "cord around the neck" is very great at the present time, for, during a part of 1909, the babies of six primiparæ whom I delivered instrumentally had short cords so tightly looped around their necks as absolutely to prevent delivery in the natural way. Too long delay in delivery means death to these children.

As 90 per cent. of births in this section are dry births, the amniotic fluid having been drained off hours or days before, the danger of having a dry, hot condition of the vagina impede the birth of the child is serious. The physician who wrote this article evidently knows just what to do in such emergencies, which demand obstetric skill, not surgical skill.

There are many grave dangers which threaten the obstetric patient in the country, but sepsis is among the least of them. Physicians who practice like the author of the article in question will not have septic infections. Of course, it is to be understood that even in the country, no physician who has been lately treating erysipelas, scarlet fever, abscess, or any disease caused by the pathogenic bacteria, should have anything to do with a case of obstetrics.

The men who criticized the article should remember that in a large percentage of cases in country practice, we see the patient for the first time when we are called to attend her in labor; we are not engaged in advance, and are not called until labor begins. Given a young primipara who has never been attended by a physician and who is terribly afraid of him, an attempt on the part of the physician to shave and scrub the external genitals, use the pelvimeter, etc., would cause such a violent attack of hysteria that the physician would cease to be of any further use to that family. It should also be remembered that in a country practice we very rarely have a graduate nurse to assist us in the care of the patient.

WILLIAM M. GREGORY, Berea, O.

Vegetarianism

To the Editor:—The editorial on vegetarianism (THE JOURNAL, Jan. 20, 1912, p. 194) gives me an occasion to discuss a few points of interest with regard to this subject.

As yet there is no such thing as an ideal diet. Except milk, nothing is intended by Nature to be a food as it is sometimes mistakenly thought. We are adapted more or less perfectly to a set of conditions and the perfection of our physical life depends on a number of factors, and food is not the only important one.

A vegetarian diet is not likely to be generally adopted in the near future. I believe, however, that we shall gradually approach it by the increased acceptance of its ethical and hygienic basis. It is quite possible, in my mind, that the diet of the future may not be comparable to a vegetarian diet of to-day. We can foresee improvements in the fruits, roots and seeds that are already in use. Eggs and milk will remain and are now an easy way to switch off from the carnivorous habit. Most critics of the idea persist in remaining on the academic ground of the quantity of protein necessary for life and work. They forget systematically other considerations that should be mentioned in connection with the use of meat. Meat is a more or less toxic food and its toxicity depends *in crescendo* on (1) the state in which the animals were when killed (fatigue, exhaustion, disease, etc.) and (2) on how the carcass is handled (length of time in storage or on the stall, possibility of bacterial contamination, etc.)

It is universally admitted that meat is injurious in some cases, especially in defective elaboration and elimination. In other words, the toxicity of meat cannot be taken care of by defective organs. This toxicity, therefore, is not immaterial.

Professor Taylor's main contention is that vegetarianism could not be applicable universally. It reminds me of a friend who thought it necessary to eat meat because the Eskimos could not live without it. I do not think that the system needs to be considered in its universal application, any more than the habits and modes of life of a higher civilization need to be applicable to the whole earth, unless we grant many thousands of years and many changes in several directions. But, even if we follow him in his argument, his conclusions are based solely on his own words; no facts are offered as proofs of them and we have to accept him as an oracle on a question that would involve a considerable amount of figuring. The quantity of protein food that is wasted is enormous. Every pound of butter represents a pound of protein that has gone to the pigs and the pigs render only a small percentage back to circulation; they make lard out of the most of it. The average consumption of protein in this country is much superior to a fairly good margin over the absolute needs. Even the poor of this land have habits of wastefulness that are appalling if we compare to them the extreme carefulness of other lands. Then it is not at all logical to offer the proposition of changing radically our habits of life and nothing else. Of course we should expect to utilize better if necessary the ground and find new resources of all kinds. The sea can render protein food of a vegetable nature. The land that is occupied by poppy and tobacco growing might be used to better purpose. The grain that is turned into whisky and beer, the grapes that are made into wine with the destruction of their protein constituents would, if utilized as food, furnish many millions of pounds of surplus available nitrogen. Great wooded areas, non-productive of food at present, could be planted with walnuts, chestnuts, etc. Sheep and goats feed very well where cattle starve. The good ground that produces but hay might easily yield quantities of grains, vegetables or pulse. I have just read a book on travel in China in which is shown that vegetarianism is a matter of necessity in that country, because there is no room for cattle. The whole of the ground has to be cultivated to produce food for men. Thus as population increases, vegetarianism does not become more remote but more necessary. A Chinese or a Japanese family would manage to live on the empty city lot that I see from my window.

There is always a possibility of a *reductio ad absurdum* in matters that pertain to the great problems of life.

J. L. BUTTNER, M.D., New Haven, Conn.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

RUPTURE OF THE BLADDER

To the Editor:—J. L., aged 35, a farm hand, had diabetes insipidus. He drank, as a rule, from two to four gallons of water in twenty-four hours. One afternoon he also consumed one quart of whisky and in the evening was unable to void urine. He suffered intensely all night. In the morning I was called. I found his bladder ruptured, only a small amount (one-half pint) of urine being found in the bladder, while the lower abdomen was much distended. I operated that afternoon and found a prevesical rupture large enough to admit two fingers. There was no anatomic obstruction or trauma to produce this condition. It seemed to be caused solely by paralysis of the bladder, the paralysis being the result of the frequent overdistention produced by the ingestion of large quantities of liquids. What caused the rupture? Also, will you please refer me to the literature. A. J. SOMERS, M.D., Portal, N. D.

ANSWER.—In such a case of rupture of the bladder as the above, there are two important factors which readily explain the occurrence—the diabetes insipidus and the drinking of a quart of whisky. It is a peculiar fact that persons with diabetes insipidus are remarkably immune to alcohol in the sense that they can consume large quantities of alcoholics without becoming deeply intoxicated. This is due, as has

been shown by Gerhardt, to the great rapidity with which the alcohol is eliminated on account of the diabetes insipidus. This does not mean that such a person cannot become intoxicated, but simply that it requires a much larger quantity.

It is well known that sensation of the bladder is much benumbed in one who has drunk freely of alcoholics, and it is not uncommon to find an overdistended bladder in normal individuals who are intoxicated, and rupture of the bladder has occurred a number of times under these conditions.

In the case mentioned, the conditions were particularly favorable. The drinking of a large amount of whisky, certainly sufficient to benumb all of the senses, and the very rapid excretion of a large amount of urine, such as occurs in the diabetic, caused the rapid overdistention and rupture of the bladder. It is more than probable, too, that, while suffering pain all night, the patient might have rolled over on his abdomen or have strained so hard in the attempt to empty the bladder that sufficient trauma was added to the overdistended bladder to cause its rupture. It will thus be seen that the possibility of trauma is by no means eliminated from this case.

The following are a few references on the subject:

Stone, R. C.: Rupture of the Bladder, *Jour. Michigan Med. Soc.*, March, 1911.

McDermott, B. A.: Two Cases of Rupture of the Bladder, *West. Med. Rev.*, September, 1910.

Cannaday, J. E.: Extraperitoneal Rupture of the Bladder, *Med. Rev.*, September 1910.

Frieberg, T.: Rupture of the Bladder During Alcohol Intoxication, *Hygiea*, July, 1910.

Judd, J. R.: Rupture of Urinary Bladder Operated On Seventy-Two Hours After Injury, THE JOURNAL, April 9, 1910, p. 1207.

Fenwick, P. C.: Rupture of the Bladder Followed by Gangrene of the Bladder Walls, *Brit. Med. Jour.*, April 2, 1910.

Tainter, F. J.: Case of Ruptured Bladder, *Jour. Missouri Med. Assn.*, February, 1910.

Talboy, J. H.: Rupture of Bladder Due to Phimosis, *Iowa Med. Jour.*, December, 1909.

Pachmayer, O.: Case of Rupture of the Bladder and Its Treatment, *Am. Jour. Urol.*, July, 1909.

Goldenberg, T.: Pathology of Rupture of Bladder, *Beitr. z. klin. Chir.*, January, 1909; abstr. in THE JOURNAL, March 13, 1909, p. 929.

Dalton, H. C.: Traumatic Rupture of the Bladder, *Jour. Missouri Med. Assn.*, September, 1908; abstr. in THE JOURNAL, Nov. 7, 1908, p. 1642.

Lang, P. H.: Case of Ruptured Bladder; Operation Forty-Two Hours After Accident; Recovery, *Lancet*, Nov. 2, 1907.

Lang, P. H.: Case of Rupture of Bladder, *Intercolonial Med. Jour.*, Aug. 20, 1907.

Espey, J. R.: Rupture of Urinary Bladder, *Colorado Med.*, May, 1907.

Horwitz, O.: Rupture of the Male Bladder, *Ann. Surg.*, December, 1906.

PHENOLPHTHALEIN

To the Editor:—Please inform me as to the value of phenolphthalein in constipation, its toxic properties, form of constipation in which it is indicated, contra-indications and dosage.

W. J. ZALESKY, Charleston, S. C.

ANSWER.—Phenolphthalein was discussed in THE JOURNAL several years ago, but it seems of enough importance to justify a brief restatement of what is known about its clinical use.

Phenolphthalein is a definite chemical substance that has long been known as a reagent in the chemical laboratory, being used as an indicator in the determination of acidity and alkalinity. It is insoluble in aqueous acids but dissolves in alkaline solutions. For this reason it is probable that it has no action in the stomach but enters into solution in the alkaline juices in the intestine and is absorbed from the intestinal mucous membrane to a certain extent. It is, however, not ordinarily excreted by the kidneys in appreciable amount. So far as known, aside from a slight depression of the blood-pressure supposed to be due to the purgative action, it has no other physiologic action than that of producing purgation. From clinical experience it has been shown to be a fairly reliable purgative, acting without producing any marked irritation. It acts in doses of from 0.06 to 0.5 gm. (from 1 to 8 grains) and shows only a slight tendency to lose its power on continued use. It is regarded as useful not only as an occasional purgative but also in chronic constipation. For this purpose it should be used as small doses of other purgatives have been used and should be resorted to rather as a temporary expedient than as a curative treatment for the condition. It can be prescribed in pills, tablets, capsules or powder. A convenient method is the use of tablets, which are now put on the market by a number of pharmaceutical houses. It can be obtained in 0.06, 0.13 and 0.2 gm. (1, 2 and 3 grain) tablets. Probably a better method would be to prescribe it in capsules, each capsule containing a moderate dose, 0.06 gm. (1 grain), and to increase the dosage as is necessary to secure the desired effect. The dose may be placed at from 0.06 to 0.5 gm. (1 to 8 grains). There is one record of a toxic action produced by a dose of 1 gm. (15 grains). Aside from this no toxic symptoms have been reported.

In phenolphthalein we have a valuable addition to the physician's armamentarium. Phenolphthalein (see New and Non-official Remedies, 1912, p. 180) is a non-proprietary article which can be procured from any up-to-date pharmacist. There is no occasion, therefore, for the use of any of the preparations of it which are sold under proprietary names. Of these a large number have been put before the public. Since its action is so simple, there appears to be no reason for combining it with other drugs, unless it seems desirable to add a little belladonna, as is done in the case of other purgatives, for its sedative action.

The subject of phenolphthalein has been discussed in the following issues of THE JOURNAL: Jan. 5, 1907, p. 70 (a small item on the physiologic action); March 30, 1907, p. 1133 (a longer article on the use of this drug as a purgative); April 20, 1907, p. 1351 (in the Department of New and Non-official Remedies a statement is made as to the method of preparation); Jan. 29, 1910, p. 343 (an article on a clinical use of the drug).

A SHOTGUN FORMULA

To the Editor:—Kindly give me a good working formula for the following, to be used in making up a pound of the mixture:

Peroxid of zinc	2 parts
Powdered alum	3 parts
Oxid of zinc	5 parts
Ichthyol	1 part
Phenol	1 part
Menthol and aromatic oils with pure petrolatum and stearin.	

In making up a pound would you use two drams or two ounces, etc.? How much petrolatum, stearin, menthol and aromatic oils would you suggest?

X. Y. Z.

ANSWER.—It is obviously impossible to determine the original formula intended by the partial prescription given above. It is apparently devised for the treatment of skin diseases, especially those accompanied by itching. Considering that phenol is a prominent constituent, it would be necessary to make the mixture so that the proportion of phenol would be safe. Phenol can be prescribed in such mixtures in the strength of from 1 to 2 per cent. Assuming that the proportion of phenol is to be 1 per cent., the other ingredients could be prescribed in the relative proportions given in the formula. Menthol may be used in the same amount as phenol. The proportion of stearin and petrolatum would depend on the degree of stiffness required in the ointment. Reasoning in this way we might devise the following:

	Gm.	
Phenol	5	75 gr.
Menthol	5	75 gr.
Ichthyol	5	75 gr.
Peroxid of zinc	10	150 gr.
Oxid of zinc	25	6 dr.
Powdered alum	15	225 gr.
Pure petrolatum	300	10 oz.
Stearin	125	4 oz.

Such a formula, while not absolutely incompatible, is too complex; it is a combination of sedatives and stimulant or irritating substances, not all of which are likely to be serviceable in the same case. Before making such a mixture it would be well to consider whether it is the effect of alum, of peroxid of zinc or of ichthyol that is required in the individual case. The use of such a mixture can hardly be regarded as proper treatment either for a condition which requires a sedative or for one which requires a stimulant; and the routine prescribing of such shotgun mixtures is almost as reprehensible as the use of nostrums, the composition of which is unknown; for while one would have a knowledge of what one is giving in the complex formula, the presence of one or another ingredient is practically certain to be overlooked.

THE VALUE OF WINDOW-TENTS

To the Editor:—Please inform me as to the value of window-tents, both in health and disease. Is the indiscriminate use of the window-tent to be advised?

W. T. PARROTT, Kinston, N. C.

ANSWER.—The window-tent is recognized as a useful device in securing fresh air without cooling too greatly the air of the room. No objection to its use occurs to us except the possibility of a person's "babying" himself and thinking that he cannot stand cold air in the room. The greatest value of the window-tent is found in its use by patients who have

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to be waited on during the night and by those who are unable to bear sleeping entirely in the open air. To open windows or doors and cool the entire sleeping-room is a hardship not only for nurses and attendants, but also for persons in comparative health who are unable to keep warm during the night, by reason of low vitality, or because, being restless, they fail to keep snugly covered. Some object to dressing in a cold room; others are troubled by the weight of the bed-clothes necessary to keep them warm in a cold room. Domestic arrangements are not always such that one can be allowed to cool off one's whole sleeping-room; for example, it may not be possible to close the sleeping-room off from the rest of the house. In all such cases the window-tent allows the fresh air to be admitted freely where the person can breathe it. This is, of course, the object for which one wants fresh air.

EOSIN-SELENIUM NOT A CURE FOR CANCER IN HUMAN BEINGS

To the Editor:—In a recent editorial you wrote concerning experiments being carried out on guinea-pigs, for the cure of malignant growths. My father is suffering from a scirrhous carcinoma, which was removed, but involvement of the glands had already taken place and the disease is slowly progressing. Would it be asking too much for further particulars or how to reach the parties mentioned above? My father is willing to take a chance if there is a ray of hope. V. R. S., M.D.

ANSWER.—Since the publication of our editorial, Jan. 13, 1911, on "The Application of Chemotherapy to Cancer," we have received a number of inquiries similar to the above. We have even been in telegraphic communication with laymen who grasped at any possible ray of hope for relatives afflicted with this almost hopeless disease. From loose or incorrect statements in the newspapers many people, even physicians, have gained the impression that a new remedy for cancer has been discovered. This is not the case. So far the method is still in the experimental stage and all the work reported has been done on mice. It was distinctly stated by those who conducted the experiments and in our editorial that the eosin-selenium method had never been employed in human beings and in the present stage of the experiments it would not and could not be so employed.

GRADUATE WORK IN EUROPE

To the Editor:—Undoubtedly there have been numerous articles written on travel subjects which are descriptive of the hospitals of Europe and South America. Please inform me where I can secure such articles or books. I remember reading some articles on "Medical South America" by Dr. Nicholas Senn in THE JOURNAL several years ago, but there are probably more recent and up-to-date articles out now. I am more especially interested in the European surgical and gynecologic hospitals. J. F. ADAMS, Aberdeen, S. D.

ANSWER.—THE JOURNAL, April 8, 1911, contained about a page and a half devoted to graduate work in the hospitals and clinics of England, Berlin, Paris and Vienna, giving the addresses of men from whom further information could be obtained, and citing a number of articles that had appeared in the literature. The following additional articles may be of interest:

Osler, William: Impressions of Paris, THE JOURNAL, Feb. 27, 1909, p. 701, and March 6, 1909, p. 771.
Kutner, R.: Postgraduate Medical Instruction, Its Present Status and Future Objects, *Post-Graduate*, March, 1910.
McMorrow, F.: Postgraduate Work for Americans at Budapest, THE JOURNAL, July 29, 1911, p. 407.
Paling, Albert: A Long Vacation, *West. Canada Med. Jour.*, November, 1911.

THE PROPRIETY OF THE PROFESSIONAL CARD IN THE NEWSPAPERS

To the Editor:—I am young in the practice of medicine and take the privilege of asking your advice. The physicians in my town are opposed to my running a professional card in the papers. Please advise me. C. W. H.

ANSWER.—The publication of an ordinary, simple, business card is largely a matter of personal taste and local custom. But the latter is very important. Our correspondent leads us to infer that the custom in his community is against "a professional card in the papers." This being true, he should conform to this custom cheerfully. Even from a purely commercial standpoint, it is bad business to forfeit the friendship of those whose sense of right the card would offend—his professional brethren. He would pay too much for his whistle. In the end, the esteem in which a physician is held by his confrères is that which establishes him in his community. It is impossible to force this; it must be the outcome of the character and conduct of the individual as these become known through his daily contact with the profession and the public.

The Public Service

Medical Department, U. S. Army

Changes during the week ended Feb. 17, 1912.

Stallman, G. E., dental surgeon, February 7, reports for temporary duty at Fort Sill, Okla.

Lauderdale, C. C., dental surgeon, February 10, left Fort Logan, Colo., en route to Walter Reed General Hospital for treatment.

Ingalls, R. E., dental surgeon, February 7, left temporary duty at Boise Barracks, Idaho, en route to station, Fort Douglas, Utah.

Hill, Eben C., lieut., February 8, relieved from further duty at Madison Barracks, N. Y., further temporary duty at Fort Monroe, Va., and from further treatment at Walter Reed General Hospital, D. C., and ordered to Fort Porter, N. Y., for duty.

Davis, William R., captain, February 9, ordered to Cleveland, Ohio, on official business.

Rich, E. W., captain, February 9, in addition to his other duties, designated as medical superintendent of transport at San Francisco, vice Colonel Rudolph G. Ebert, medical corps, relieved.

Skinner, G. A., major, February 10, granted thirty days' leave of absence, to take effect on relief from duty at Fort D. A. Russell, Wyo. Major Skinner, on expiration of his leave, will proceed to the Philippine Islands for duty.

Slater, E. F., M.R.C., February 12, ordered to repair to this city for temporary duty in the office of the adjutant general of the Army.

Clayton, J. B., major, February 14, granted thirty days' leave of absence, about May 15, 1912.

Brooks, W. H., major, February 14, relieved from duty at Fort McDowell, Cal., and ordered to duty at presidio of San Francisco.

Henry, Z. L., M.R.C., February 14, granted thirty days' leave.

Straub, P. F., major, February 15, orders amended to relieve him from duty in this city on July 1 instead of March 15, 1912.

Woodruff, C. E., lieut. col., February 5, in addition to his other duties is assigned to duty as assistant to the chief surgeon of the western division, San Francisco.

U. S. Public Health and Marine-Hospital Service

Changes for the week ended Feb. 14, 1912.

White, J. H., surgeon, granted one month's leave of absence, without pay, from Feb. 15, 1912.

Cobb, J. O., surgeon, detailed to represent the service on the Lake Michigan water commission.

Hunt, Reid, and Franklin, E. C., professors of the hygienic laboratory, designated to represent the department on organizing committee of the Eighth International Congress of Applied Chemistry.

White, R. C., A. A. surgeon, granted thirty days' extension of annual leave, on account of sickness, from Jan. 1, 1912, and thirty days' leave from Jan. 31, 1912.

Board of medical officers convened at Manila, P. I., for the physical examination of Assistant Surgeon Robert Olesen, to determine his fitness for promotion to the grade of passed assistant surgeon. Detail for the board: Passed Assistant Surgeon Victor G. Heiser, chairman; Passed Assistant Surgeon Carroll Fox, recorder.

Board of medical officers established to meet at such times as may be necessary at the Marine Hospital office, 410 Chestnut Street, Philadelphia, for the medical re-examination of aliens. Detail for the board: Surgeon J. H. Oakley, chairman; Acting Assistant Surgeon H. Horning; Acting Assistant Surgeon W. H. Walsh, recorder.

Medical Education and State Boards of Registration

COMING EXAMINATIONS

CONNECTICUT: Regular, City Hall, New Haven, March 12-15. Sec., Dr. Charles A. Tuttle; Homeopathic, Grace Hospital, New Haven, March 12. Sec., Dr. Edwin C. M. Hall, 82 Grand Ave.; Eclectic, Hotel Grace, New Haven, March 12. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

MAINE: City Council Rooms, Portland, March 12-13. Sec., Dr. Frank W. Searle, 776 Congress Street.

MASSACHUSETTS: State House, Boston, March 12-14. Sec., Dr. Edwin B Harvey, Room 159, State House.

WYOMING: Riverton, March 13-15. Sec., Dr. Albert B. Tonkin.

Annual Conference on Medical Education, Medical Legislation and Public Health

Annual conferences under the auspices of the Council on Medical Education and the Council on Health and Public Instruction will be held in the Florentine Room of the Congress Hotel, Chicago, Monday and Tuesday, Feb. 26 and 27, 1912.

On Monday morning, beginning at 9 o'clock, the Council on Medical Education will hold its eighth annual conference. The following is the program:

Address of the Chairman, Dr. Arthur Dean Bevan, Chicago.

Report of the Secretary, Dr. N. P. Colwell, Chicago.

Address—"The Organization and the System of Examinations of the Conjoint Examining Board of the Royal College of Physicians of London and the Royal College of Surgeons of England," Mr. Frederic G. Hallett, London, England.

Discussion—Dr. George Dock, Dean of Washington University, Medical Department, St. Louis; Dr. Richard C. Cabot, Assistant Professor of Clinical Medicine, Harvard Medical School, Boston; and Dr. George H. Matson, Secretary of the Ohio State Medical Board, Columbus.

Address—"Some Administrative Phases of Entrance Requirements," Prof. K. D. Swartzel, Preliminary Examiner of the Ohio Medical Board, Columbus.

Discussion—Mr. Augustus S. Downing, First Assistant Commissioner of Education, Albany, N. Y., and Dr. Beverly D. Harison, Secretary of the Michigan State Board of Registration in Medicine, Detroit.

Address—"The Relation of the Medical School to the Intern or Hospital Year," Dr. Reuben Peterson, Professor of Obstetrics and Gynecology of the University of Michigan, College of Medicine, Ann Arbor.

Discussion—Dr. John B. Murphy, President of the American Medical Association, Chicago; Dr. Victor C. Vaughan, Dean of the University of Michigan, Department of Medicine and Surgery, Ann Arbor; Dr. William J. Means, Professor of Surgery, Starling-Ohio Medical College, Columbus, Ohio; Dr. Samuel W. Lambert, Dean of Columbia University College of Physicians and Surgeons, New York City; Dr. Edward Jackson, Professor of Ophthalmology, University of Colorado, School of Medicine, Denver; Dr. Egbert Le Fevre, Dean of the University and Bellevue Hospital Medical College, New York City; and Dr. Isadore Dyer, Dean of the Tulane University Medical Department, New Orleans.

Symposium on "Medical Education in the South"—President, E. B. Craighead, of the Tulane University of Louisiana, New Orleans; Chancellor, James H. Kirkland, of Vanderbilt University, Nashville, Tenn.; President, S. E. Mezes, of the University of Texas, Austin.

Discussion—Dr. Richard H. Whitehead, Dean of the University of Virginia Department of Medicine, Charlottesville.

On Tuesday, the Council on Health and Public Instruction will hold its Conference on Medical Legislation and Public Health. The following is the program:

Address by the Chairman, Dr. Henry B. Favill, Chicago.

Report of Secretary and Presentation of Reports from Members of the National Legislative Council.

Introduction of New Business, Resolutions, etc.

Appointment of Committee on Resolutions.

"The Present Status of Vital Statistics in the United States," Dr. Cressy L. Wilbur, Washington, D. C.

"The Essentials of State Legislation on Foods and Drugs," E. F. Ladd, State Commissioner of Foods and Drugs, Fargo, N. Dak.

Discussion.

"What Is Railway Sanitation and How Can It Be Obtained? Dr. Arthur M. Hume, Owosso, Mich., Chief Surgeon, Ann Arbor Railway Company. Discussion opened by Dr. T. R. Crowder, Superintendent of Sanitation, Pullman Car Company, Chicago.

"Federal Inspection of Dairy Products," Dr. H. M. Bracken, St. Paul, Minn. Discussion opened by Major Lang, Chief of the Chicago Office, Dairy Inspection, Department of Agriculture.

"What Education and Training Are Necessary for State and Municipal Health Officers," Dr. George B. Young, Commissioner of Health, Chicago.

The Campaign for Conservation of Vision, Dr. F. Park Lewis, Buffalo, N. Y.

"A Program for Local and State Organizations for the Suppression of Tuberculosis," Dr. J. W. Pettit, Superintendent Ottawa Tent Colony, Ottawa, Ill.

Discussion of Organization of a Council on Public Health.

Report of Committee on Resolutions.

Colleges Increase Entrance Requirements

The entrance requirements of Washington University Medical School for 1912-13 will be two years of collegiate work including specified work in physics, chemistry, biology, German and English. For the last two sessions one year of college work has been required.

Dr. Paul G. Woolley, dean of the Ohio-Miami Medical College of the University of Cincinnati, states that the medical faculty recently voted unanimously that after June 1, 1913, the entrance requirements of that medical school shall be two years of specified university work.

This makes thirty medical schools which require two or more years of collegiate work for admission. There are also seventeen medical schools requiring one year of collegiate work, making a total of forty-seven which have requirements beyond the standard four-year high school course.

Florida November Report

Dr. J. D. Fernandez, secretary of the Florida State Board of Medical Examiners, reports the written examination held at Jacksonville, Nov. 7, 1911. The number of subjects examined in was 7; total number of questions asked, 70; percentage required to pass, 75. The total number of candidates examined was 62, of whom 41 passed and 21 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Medical College of Alabama....(1910) 75;	(1911) 83,	86
Birmingham Medical College	(1911)	93
Howard University	(1907)	81
Atlanta School of Medicine	(1911)	75
Atlanta College of Phys. and Surgs. (1910) 79, 93;	(1911) 75,	75
Rush Medical College....(1884) 80;	(1906)	83
Chicago College of Med. and Surg....(1909) 80;	(1910)	75
University of Louisville (1892) 80; (1894) 79; (1909) 78;	(1911) 78.	
Medical College of Indiana	(1881)	75
Tulane University of Louisiana....(1897) 89;	(1911)	89
Baltimore Medical College	(1900)	88
Johns Hopkins University	(1902)	85
University of Maryland....(1910) 92;	(1911)	82
College of Physicians and Surgeons, Boston	(1911)	75
Barnes Medical College	(1901)	83
St. Louis University	(1904)	81
Columbia University, College of Phys. and Surgs.	(1875)	86
University of Buffalo	(1911)	83
Syracuse University	(1906)	83
Leonard Medical School	(1910)	75
Jefferson Medical College	(1902)	77
University of Pennsylvania....(1909) 88;	(1910)	88
Medico-Chirurgical College of Philadelphia	(1901)	83
Medical College of South Carolina	(1911) 80,	96
Memphis Hospital Medical College	(1903)	81
Chattanooga Medical College	(1910)	88
Vanderbilt University	(1911)	87
FAILED		
University of Alabama	(1903)	63
Atlanta School of Medicine	(1908)	52
Atlanta College of Physicians and Surgeons (1910) 62;	(1911) 61, 63, 70.	
Medical College of Georgia	(1911)	54
University of Louisville	(1911)	66
Louisville National Medical College	(1910)	45
Louisville Medical College	(1891)	54
Baltimore University	(1899)	58
St. Louis College of Phys. and Surgs....(1904) 59;	(1911)	57
Medical College of South Carolina....(1910) 66;	(1911) 59,	68
Meharry Medical College	(1908)	68
Chattanooga Medical College	(1896)	60
University of West Tennessee	(1911)	62
University of Tennessee	(1909)	58
Memphis Hospital Medical College	(1899)	67

THE INVESTIGATION OF MEDICAL EDUCATION IN LONDON

The following are abstracts of memoranda and other information furnished by the individuals named to the Royal Commission on University Education in London, which was created a few years ago to inquire into the facilities for advanced education existing in London for persons of either sex above secondary school age and to make recommendations for improvement. The memoranda are published in full in the Appendix to the Third Report of the Commission.

Professor von Müller on Medical Education in Germany

In his memorandum on medical education Professor Friedrich von Müller presents the German scheme for the practical education of the physician, based (1) on the idea that medical education is the function of the state in the interest of the public health and the prevention of disease, and (2) on the view that those who are to care for the health of the people should be broadly educated and should take rank among the learned men of the country. Medical education is therefore a part of university education and the conditions of pursuing medical studies are the same as those of admission to other departments of the university.

The state, therefore, selects the instructors and pays salaries sufficient for dignified self-support with an additional sum derived from the fees of students, varying with the number of students of the individual teachers. The position and the career of the teacher depend on his scientific attainments, and his promotion may come not merely from his own university but from any other university in the country.

In addition to the selection and pay of teachers, the state provides buildings and laboratory equipment at considerable expense. Thus, in Prussia, the state contributes toward the education of every student of medicine $475 per year. A

considerable part of the expense for the education of the medical student goes to the support of hospitals for clinical teaching. A portion of these hospitals are municipal institutions, in which more or less difficulty is met in securing the use of the patients as material for clinical instruction. For this reason the state has been obliged also to provide university hospitals in which the material is more completely under the control of the medical faculty. The patients for this clinical teaching are not supplied entirely by charity, as in the case of the English hospitals, but to a very large extent they are the beneficiaries of the state industrial insurance law. The sum paid for insurance of the working classes amounts in Germany to nearly $90,000,000 yearly. Professor von Müller predicts that, with the establishment of the new insurance law for the working classes in England, it will be necessary to erect great new hospitals for those insured patients who cannot afford proper treatment at home, and suggests that it may be useful to bring those hospitals into connection with the university teaching of medicine.

In the education of the German medical student, such subjects as physics, chemistry, biology and other natural sciences, are begun at the age of 18 or 19 years, in the class-rooms and laboratories of the philosophic faculty. At the same time he receives instruction in anatomy from the medical faculty and in the second year and the first half of the third year he attends the lectures in normal histology and embryology. During this time he attends lectures on pharmacology and takes practical instruction in the hospital wards in the physical examination of patients, in the propedeutics of surgery and midwifery, and in clinical chemistry and microscopy. He is then prepared to enter the clinic. German clinical teaching differs from English in that the young student is not immediately brought into contact with the patient. In Germany, especially in the larger universities, the clinical teacher shows to all the students in the theater every day one or two selected cases which are especially adapted to illustrate the conception of the disease. The patient is examined before the whole class; the teacher explains the symptoms and discusses the general pathologic questions which are connected with the case. Only after acquiring some general knowledge is the student brought into closer contact with the patient under control of the assistants. Each individual patient, in Müller's estimation, shows such complicated possibilities that the beginner cannot understand the whole significance of the case until he has acquired a certain fund of knowledge. The work in the hospital is followed, not preceded as in the English system, by work in the out-patient department. The Germans believe that it is more difficult, and requires greater experience, to deal with out-patients and find out quickly the essential points, than to work under direction in the wards of a hospital where the cases are far better prepared and more thoroughly examined by the assistant and the head physician. During his last year the student attends clinics in the specialties and lectures and laboratory work in bacteriology and hygiene, with dissections of pathologic cases.

Admission to practice is secured by an examination conducted under the control of the empire and allowing the right to practice in all parts of the empire. As a rule, the examination is conducted by university professors, but not necessarily those under whom the pupil has studied. It is not at all obligatory that the student should pass this examination at the university at which he has studied. The state examination must be followed by a year of practical hospital work under the control of hospital physicians before the licensee is permitted to undertake private practice.

Von Müller emphasizes the fact that the range and scope of study are far more important than examinations, and that it is not the province of the university to prepare for examination, but for the future life and vocation. Reform must begin with the instruction and not with the examination. A sharp distinction must be made between the state examination which gives the license to practice and the academic degree. The degree of M.D. can be conferred by the medical faculty in all German universities on nearly the same conditions. While the state examination is especially practical, the degree of M.D. is a scientific credential based on a piece of scientific work—some experimental investigation or some clinical observations with consideration of the pertinent literature.

The teachers of science for medical students are university professors and their selection follows the same lines as in the case of university professors in general. Only those who are actively engaged in scientific research are capable of being university teachers. Since the clinical hospitals are well-established institutions of the university, and since the clinical teachers are fully acknowledged university professors, they must be selected from among the scientists and not from among the successful practitioners. The clinical professor should have a wide scientific foundation apart from practical medicine, it may be in pathology or in physiology; the clinical teacher must be fitted to conduct not only the work in his ward but also the work in his laboratories. "But, above all, he must be a good physician because he has to instruct the young generation in practical medicine. If he should not be thoroughly acquainted with general medicine there would soon arise a discrepancy between the university teachers and medicine—such a disagreement as we find between scientific jurisprudence and the practice of law, and which we all deplore." The professor of clinical medicine has to consider his professional work as his principal duty, to which he devotes the main portion of his day in his hospital wards and laboratory. It is not a recommendation for a clinical professor that he has a large private practice, and he should not waste too much of his time in consultation. The limit of his private consulting practice must be left to his own conscientiousness. In Müller's opinion, the clinical teacher should not be altogether forbidden to engage in private practice, for he should be in constant touch, not only with the progress of science, but also with general professional life and with medical practitioners. If he should be confined entirely to his laboratory and hospital, he would be liable to make mistakes and come to wrong conclusions.

The clinical professor must have his staff of well-educated assistants, experts in various departments, especially in laboratory work, who should not be changed frequently. The future clinical directors will be selected from the number of old and thoroughly trained clinical assistants. The clinical assistant knows that his future career as a professor of medicine depends mainly on his scientific work and hence devotes himself to scientific investigation.

It is obvious that such a clinician must be in charge of his wards and laboratories throughout the year. Under this condition alone can he conduct the work of his wards and control his assistants and his nurses with a strong hand. The selection of a university professor for a vacant chair, even in a clinical branch, should not be restricted to the junior members of the same school, but should be made from the wide field of all the universities speaking the same language. Inbreeding is as bad in university management as in nature. Fresh blood and competition with the other best centers is the chief consideration for the welfare of universities and hospitals.

The aim of medical education should be to provide capable and highly educated physicians for the remotest hamlet and to build so as to care for the coming generation. A plan of reform which is intended only to meet the wants of the present day is wrong from the beginning. All plans must be broad enough to allow further expansion and accommodation to the necessities of advancement in science.

Mr. Abraham Flexner on Medical Education in Great Britain

Mr. Abraham Flexner, of the Carnegie Foundation for the Advancement of Teaching, in his paper said that during the last century there had been three distinct phases in the development of medical education. The first was medical teaching as it originated in schools of anatomy. For clinical work the students accompanied the physician in his hospital rounds. Teaching was an incident in the life of the physicians. Second, with the development of the sciences, chemistry, physics, biology, physiology, pathology, bacteriology and pharmacology, it was necessary to provide full-time teachers in these branches, but clinical teaching remained the same. Third, the last stage is marked by the differentiation of the clinical

teacher. Teaching and research are his interest, business and duty. Practice is secondary. If pathology requires the full time of the teacher, surely an equal devotion is necessary on the part of the clinical teacher and investigator in dealing with the more intricate problems of medicine.

London is behind, according to Mr. Flexner, in methods of teaching. In some places, anatomy is still in the hands of a surgeon; pharmacology is taught in but one school and clinical teaching is in the hands of a busy consultant who visits his wards twice a week and has not the time to study clinical problems by the light of the latest developments of science. Although the hospitals care well for their patients, yet there is a lack of necessary laboratory equipment and the house staff is made up of recent graduates serving only for a short term. Accordingly, medical education is not an organic whole.

But London has more clinical material for teaching and research than any other city in the world and the conditions for teaching are very favorable. London needs scientific producing clinicians—so salaried that they may devote their main time and thought to teaching and investigation. The younger men must be trained to be producers.

In the University of Berlin, according to Mr. Flexner, no man holding an important position practices medicine, although the assistant professors have outside work in the afternoon. The university must pay the salaries of the professors, the surgeons and physicians, and must finance the laboratories. Mr. Flexner also emphasized the need of at least two years of college work, four years in the medical school and a year as intern, as the present requirements for a physician.

Sir William Osler on University Education in Medical Schools

Sir William Osler says that four questions must be considered: university work, a hospital unit, their connection with each other, and the interest they have for us and for the community.

The function of the university is to teach students and to advance learning; that is, to increase man's knowledge of man and Nature. No real progress was made until knowledge was pursued for its own sake.

Three of the greatest advances of modern times have come from the studies of strictly laboratory workers: Faraday in physics, the Curies in chemistry, and Pasteur in biology. During the past generation the advances in medicine have been most marked. To-day, there are specialists in charge of laboratories for anatomy, physiology and pathology with their subdivisions of histology, embryology, physiologic chemistry and pharmacology. In some places there are large separate institutes devoted to these subjects. "The urgent need to-day is to extend this type of university work into our medical schools so that all branches of the curriculum are included"—medicine, surgery, midwifery, and gynecology as well as anatomy and pathology.

The difficulty is that the practical schools which deal with these subjects are not under the control of the university or have only a feeble affiliation.

In regard to the hospital unit, the hospital stands "primarily for the cure of the sick and the relief of suffering; secondly, for the study of the problems of disease; and thirdly, for the training of men and women to serve the public as doctors and nurses." These ends are best achieved through the hospital unit; that is, each department in medicine should be fully equipped with its own clinics, lecture-rooms, laboratories, rooms for students, and the whole paraphernalia for teaching and research. As in Vienna and Berlin, there might be two or three units in medicine and surgery.

The unit consists of the director, the patients, the laboratories and the staff. The professor or director sees that the patients are well treated, investigates disease, and teaches the students and nurses. Second in the unit are the patients, then the necessary laboratories for cardiorespiratory physics and physiology; bacteriology and vaccine therapy; chemistry; microscopy; Roentgen-ray and electrical work, and a general laboratory for students. Lastly comes the staff, the senior assistants, whole-time men, holding their positions for years; the junior assistants, who are appointed annually from the senior class, the laboratory chiefs, and the out-patient staff or assistant professors, who are, as a rule, men in private practice, and are in charge of the junior teaching. The problem is, how to place a dozen or more teachers in every medical school in the same relation with the university as the professors of physiology and physics—how to give to each one of these a department organized on university lines.

The student should be made to feel that the hospital is his home, and should become enthusiastic over the practical work of the ward. Vacations should be done away with and the school year divided into quarters.

Finally comes research work; the problems in medicine are innumerable and the better students may be given work on these problems.

"We need an active invasion of the hospitals by the universities." The universities must pay their share of the expenses. "The men in charge of the units must be paid salaries sufficient to enable them to devote at least one-half of their time to hospital work—to give it the first place in their lives," but to insist that he give his whole time to this work limits the man too much and does not benefit the public or the man individually.

Some additional points, brought out in the answers to questions by the commissioners, show that Osler believes that not a single hospital physician in London has at his command a complete set of proper hospital laboratories. He stated also that laboratory workers in charge of chemistry and bacteriology had to be full-time men. In regard to the professorships, when the man who is at the head of a department is engaged in a large private practice, the clinics are very apt to suffer much on that account.

Medical Economics

THIS DEPARTMENT EMBODIES THE SUBJECTS OF POST-GRADUATE WORK, CONTRACT PRACTICE, LEGISLATION, MEDICAL DEFENSE, AND OTHER MEDICOLEGAL AND ECONOMIC QUESTIONS OF INTEREST TO PHYSICIANS

DIVISION OF FEES AND SECRET COMMISSIONS

In this department of THE JOURNAL (Jan. 7, 1911, p. 59) appeared the report of the Committee of the Erie County (N. Y.) Medical Society appointed to investigate the causes and extent of this evil and to suggest remedies.

At that time, as well as on numerous other occasions, THE JOURNAL unsparingly denounced this practice and warned physicians that if this abuse was not investigated and corrected by the medical profession, it would soon be taken up and dealt with by the public. It was also pointed out that the correction of this evil was necessarily a duty of the local or county society, as neither the state nor the national organizations could deal with it properly. County societies were warned that if they did not do their duty in this particular, they could not complain if the public itself took it up. Evidently, this prediction has been realized in New York.

At a recent meeting of the Board of Regents of the University of New York (the licensing body in that state) Dr. A. S. Draper, state commissioner of education, presented a report on this subject, based on the report of the committee of the Erie County Medical Society. In his report Commissioner Draper said, in part:

"At a meeting of the Board of Regents held April 19, 1911, a somewhat elaborate report or memorial bearing on the ethical standards of the medical profession and the educational standards of admission to the profession was received from the Erie County Medical Society. Its importance led the Board of Regents to refer this document to the State Board of Medical Examiners for report. . . .

"There are two sides to this subject. The first relates to the common attitude of the profession concerning the correct lines of moral conduct touching its relations to patients. About that it is not necessary to say much now, but it is vitally related to the educational requirements for admission to the profession, and to their enforcement, and it is all thrust on us by the report from the Erie County Medical Society. . . .

"In the report . . . representations are made that the practice of 'splitting fees' between physicians and surgeons,

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or between physicians and consulting physicians, is common. It is held to be unethical. The practice referred to consists, I suppose, of the more thoroughly trained or more experienced physician or surgeon paying the less experienced or less capable one for bringing him patients, the division of fees being without the knowledge of the patient but of course paid by or for him. It is impossible to say how common this practice is. It is certainly reprehensible because it develops the motive for deception and overreaching and it changes the relations of the parties from a personal and professional into a commercial one. It is suggested that the legislature be requested to consider the advisability of amending the law so as to prohibit a consulting physician or surgeon from paying fees to another practitioner for bringing him business without making the fact of such payment known to the patient concerned or to the relative or friend acting in behalf of such patient. It might also be well for the Board of Regents to announce that it will revoke the licenses of physicians or surgeons determined to have been guilty of the practice."

Commenting on this report, the Brooklyn *Eagle* of January 28 printed a long editorial in which the need of reform was urged. Only a part of the *Eagle's* editorial can be quoted:

"The evil it arraigns is a form of trade unionism by surgeons and physicians for attendance on the injured and the ill. The prices charged and 'split' are not only oppressive but collusive. They are moderately characterized when called a conspiracy of corrupt surgeons and physicians against patients. The offense is a new one in the world of medicine, but in morals it is analogous to the wrongs the McNamaras committed against honest united labor, with results that narrowly saved them from execution after having brought death itself to scores of others.

"It is a peculiar shame that the State of New York has been made the theater of these offenses which Dr. Draper very judiciously sets forth. Erie is the county in which the offenses have been discovered. That they exist to a degree in other counties is certain. The proportion of shameless physicians, distinct, but we hope not large anywhere, cannot be assumed to be greater in Erie County than elsewhere by any consideration of distributive depravity or of human nature itself.

"The honest union of doctors and surgeons is desirable for fellowship, study and exchange of experience. The proportioning of charges to the eminence of practitioners and measurably to the resources of patients is in a sense defensible. The differentiation of charges, based on the eminence of doctors and, within reason, on the wealth or poverty of patients, is also defensible, always provided that from doctors, paid by municipal government and in hospitals bountied by public money, the poor get as good service as the well-to-do, the 'rich' commanding only the comforts and luxuries, grateful to them but not essential to their professional treatment.

"That may be all right, but that is not this case. Collusion between surgeons and physicians is shown by the 'split fee' system which makes patients the victims of practitioners and surgeons and which presents both divisions of the profession as conspirators in the overmulcting of patients who are alike deceived and robbed. That Dr. Draper makes as plain as types here make plain the assertion of it. And Dr. Draper proves what he says, as any reader of his words can see. The scandal of this is bad. The temptation of this is worse. It is collusion. It breeds robbery. It is conspiracy and when exposed it tempts to organized perjury in denial of confederated plunder. It is as against medicine a sin akin to the sin against the Holy Ghost in the realm of faith, and in any world the one sin should be eternally as unforgivable as the other.

"Honorable men of medicine should be of but one mind on this. They inwardly are, but too many of them fear to say they are. Their fear is the result of trade unionism in their profession, which they call by another name. Interest may deceive them. It does not deceive other men of equal intelligence. And 'God is not mocked' nor deceived by it. He is not more conscious of 'the blood of His innocents' than He is of the moral rights of those made in His image and likeness.

"The necessity is reform. The question is, can the societies of physicians and surgeons assure this reform. In medicine as in politics, the question is can reform from the inside be expected or must reform from the outside be invoked and secured? Partisans are not more insistent than physicians on the capability of reform from the inside. Partisans have been almost invariably wrong on that contention. It is to be seen whether physicians will be any more right than partisans on that contention. But by physicians or over or in spite of them the reform will come. That is unquestionable. That is what physicians should regard as inevitable. A race that has evolved surgeons from barbers, writers from tramp servitors and physicians from voodoo conjurers will find the means of evolving the reforms that are inevitable from the medical profession or from forces outside of it more progressive than that profession may show itself to be.

"The wrongs disclosed will be righted. The reforms required will be secured, despite the fact that among the offenders the worst are the boldest and the weakest are the most silent. Dr. Draper is in nothing wholesale and in all things just, but his soul and the souls of those of whom he is the executive and the spokesman are profoundly stirred. This free and strong state will end the wrongs he exposes and secure the rights he advocates. Inside or outside 'the profession,' by it or over it, the moral revolution required will be accomplished. And the time required will be well spent, to deserve and to win the praise of the Great Physician on Whose Name none of that sacred calling should be the parody or the reproach which a fetid few now are."

The *Eagle* sums the whole situation up in a sentence when it says that the question is whether reform of this evil can come from the inside or whether correction must come from without. Physicians themselves, through their local organizations, can correct this evil, if they will. If they do not, then they must expect the public itself to take the correction into its own hands. And if this is done, the results are likely to be exceedingly painful to some one.

POSTGRADUATE COURSE FOR COUNTY SOCIETIES

General Subject for the Month: Normal and Pathologic Pregnancy

Seventh Month—First Weekly Meeting

EMBRYOLOGY

OVA: Origin, development; primordial ova, number, distribution and growth; Graafian follicle, formation, cells, discus, fluid; rupture of follicles, ovulation. Structure of ova. Maturation, formation of female pronucleus, relation of polar bodies to embryomas. Unfecundated ova.

SPERMATOZOA: Number, nuclei, movements, male pronucleus.

FERTILIZATION: Segmentation nucleus, location.

SEGMENTATION: Morula, vesicle, germ layers, trophoblast.

MIGRATION: Sites, duration, forces.

IMPLANTATION: Time, action of trophoblast, primitive villi, maternal blood sinuses.

DECIDUA: Vera, serotina and reflexa.

CHORION: Formation, villi, syncytium. Frondosum and leve.

AMNION: Sac. Liquor amnii.

ALLANTOIS: Yolk sac. Cord. Placenta.

EMBRYO: Development to sixth week.

FETUS: Appearance and growth of organs, size, length.

MULTIPLE PREGNANCY

Origin, arrangement of membranes and placenta, diagnosis, termination.

ANTENATAL PATHOLOGY

DECIDUA: Acute infections, hyperplasia endometrii, hydrorrhea gravidarum.

CHORION: Hydatid mole,[1] changes in villi, syncytium, stroma, vessels. Symptoms and treatment. Chorioepithelioma.[2]

PLACENTA: Abnormalities in shape, size and weight. Adherent placenta. Placental infection, syphilis, infarcts.[3] Calcareous degeneration.

AMNION: Hydramnios; causes, symptoms, diagnosis, treatment. Oligohydramnios. Amniotic bands.

CORD: Velamentous insertion, stenosis, abnormal length.

EMBRYO: Malformations and monstrosities of germinal and embryonic periods. Nutritional and infectious diseases. Traumatism of embryo and fetus.

REFERENCE BOOKS FOR THE SEVENTH MONTH

Text-books of obstetrics by Williams, Edgar, Hirst, Jewett, Garrigues and the American Text-Book of Obstetrics.

1. Findley: Am. Jour. Med. Sciences, 1903, cxxv, 486.
2. Frank: New York Medical Journal, 1906, lxxxiii, 864.
3. Williams: American Journal of Obstetrics, 1900, xli, 775.

Book Notices

HEREDITY IN RELATION TO EUGENICS. By Charles Benedict Davenport, Carnegie Institution of Washington, Director. Cloth. Price, $2. Pp. 298. New York: Henry Holt & Co., 1911.

In reviewing a book it is always well to know the author's aim in writing it. In the present instance the author believes that "our social problems still remain problems. For a long time yet our watchword must be investigation. The advance that has been made so far is chiefly in getting a better method of study. In this book I have sought to explain this new method." "It is the aim of this book to incite to further investigation." The author's aim, therefore, is not only to stimulate investigation but also to point out a better method of studying some of the social problems. It cannot be said that the author has presented anything particularly new in the method of study; the enthusiasm with which he presents the subject may incite to investigation. The author believes that traits are inherited; that the various traits or unit characters are all present, at least potentially, in the germ plasma and that they are transmitted to the germ plasma by what are called "determiners." It is simply the difference in the determiners present in two fertilized eggs that makes one develop into an ox and the other into a man.

Determiners are present in both the egg from the mother's side and the sperm from the father's side and it is the combination of these two groups of determiners in the offspring that shapes or determines its character or in other words its traits.

By the judicious mating of individuals possessing the proper determiners the author believes that the human race can be greatly improved in the same manner that scientific breeding of animals improves the stock. That there is much truth in this theory in the abstract no one who has given the subject any thought will deny. It will be granted, too, that much good may come from the scientific study of the subject, and the application of the facts to concrete life, but the author's enthusiasm leads him at times to disregard other very important factors in the evolution of the human race and makes him rather pessimistic as to the outcome unless certain methods of mating or breeding are followed.

For instance, "Unless people accept this simple truth and let it influence marriage selection, human progress will cease." This is of course an overdrawn statement, for the human animal made great progress long before the science of eugenics was dreamed of and would continue to make progress without it; but more rapid progress undoubtedly can be made when the truths of eugenics are discovered and properly applied.

In considering the different traits it is difficult to understand why art, painting, sculpture, etc., should be looked on as positive units of character or due to the presence of determiners, while music is looked on as a recession or as dependent on the absence of something, so that "high attainment in vocal or instrumental music is due to the same defect in the protoplasm." If musical talent is to be considered a defect in the human makeup, what a blessing it is that there are so many defectives!

Pauperism, narcotism and criminality are classed with hysteria, insanity and many other diseases of the nervous system as inherited traits. Many diseases such as progressive, pernicious anemia, nose-bleed, splenic anemia, exophthalmic goiter, pneumonia, rheumatism, many diseases of the spinal cord, prolapse of the uterus and many others are classed as inherited conditions without sufficient reason—in fact in many cases without any reason.

The author's great fault is that he undervalues the effect of the influences to which the individual is subjected after birth. The more we know of these conditions the less mystery there is in the unexplained.

The author considers that all the acts characteristic of persons classed as "feeble-minded" and all those which belong to criminals and which are now classed as crimes "are the normal acts of our remote ancestors" and "are so common with infants that we laugh when they do such things" and that all such traits "are normal for the infant and for an early stage in man's evolution." If all of these traits were normal for our ancestors and the traits of our ancestors are perpetuated by inheritance, why is it that practically all of these traits have become eliminated from the normal individual of to-day? Simply because the fundamental law of evolution is progress, and progress means the elimination of defects and not their perpetuation. This fact is not sufficiently recognized by the author. This, however, does not mean that the criminalistic, the epileptic and the insane do not tend to reproduce their kind in society and that their reproduction should not be prevented, but simply means that there is more to the problem than heredity.

The author objects to sterilization of this class of individuals on what appears to us as insufficient grounds. Until more is known of the laws of eugenics, and until the people become more impressed with the advantages which will result from the application of these principles, it is not to be expected that the author's suggestion to limit immigration by a careful study of the family traits of the immigrants so as to exclude all those with bad "blood" will soon be realized.

The work is an interesting one and should be read by laymen and particularly by legislators as well as by the professional man.

THE SURGICAL CLINICS OF JOHN B. MURPHY, M.D., AT MERCY HOSPITAL, CHICAGO. Volume 1, Number 1. Paper. Pp. 133, with illustrations. Six numbers a year. Price per year, $8. Philadelphia: W. B. Saunders Company, 1912.

This is a new departure in medical publishing in this country. The work is neither a journal nor a text-book, but a combination of the two. It is a verbatim stenographic report of the public clinics held for physicians by Dr. Murphy at the Mercy Hospital, each bimonthly issue representing the latest views of the author on the particular subject treated. The subjects covered in the first number are: carcinoma of breast; nerve anastomosis; fracture of patella; Charcot's disease of hip-joint; pelvic tumor; duodenal ulcer; hydrothorax; and hemangioma of leg. The history of each case is given, and, of course, diagnosis is well covered, the method of arriving at diagnosis, reasons for it, and all the points involved in the living pathology of the particular type of case presented. Dr. Murphy's method of teaching is so practical that an exact record of his clinics cannot fail to be of great value. These *Clinics* are to be issued bimonthly, each number to contain about 130 pages with illustrations, etc. The bimonthly numbers are bound in paper; the idea is, we presume, that later two or more numbers will be bound together in cloth. If the numbers to follow are equal to the first one, the series will certainly be in great demand, for they are very practical —well up to date and full of valuable, useful suggestions.

FOOD VALUES. Practical Tables for Use in Private Practice and Public Institutions. By Edwin A. Locke, A.M., M.D., Instructor in Medicine, Harvard Medical School, Boston. Cloth. Price, $1.25 net. Pp. 110. New York: D. Appleton & Co., 1911.

This is not a treatise on dietetics, but in the first pages some of the principles of dietetics which guide one in computing a balanced ration are explained. The kernel of the volume is the valuable table of common American foods which gives the composition and energy value of common portions such as "usual helping," "tablespoon," "one chop." This makes it easy for physicians, laymen or superintendents of institutions to calculate the value and balance of a menu. There are also included a table of weights and measures and Atwater and Bryant's well-known table of average chemical composition of American foods.

MEINE PRÄPARATIONSMETHODE DES OPERATIONSFELDES MITTELS JODTINKTUR. Von Dr. Antonio Grossich, Primarchirurg am Ospedale civico in Fiume. Paper. Price, 75 cents. Pp. 80. Berlin: Urban und Schwarzenberg, 1911 (New York: Rebman Co.)

Since Grossich in 1908 first called attention to the iodin method of sterilizing the skin it has found a wide application and has given very gratifying results. In this little brochure the author presents some personal observations on the use of the method with a chapter on the alleged harmful after-effects of the iodin. Following this is a reprint of all the author's previous articles on the subject, together with extracts from practically all of the articles which he could find in literature. The method itself is undoubtedly of great value and its extreme simplicity commends it to all.

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Medicolegal

Color Blindness as Sickness

(Kane vs. Chicago, Burlington & Quincy Railroad Co. (Neb.), 132 N. W. R. 920)

The Supreme Court of Nebraska holds that a railway night switchman becoming color blind during his employment is thereby disabled by sickness within the meaning of his employer's contract that it will pay him sick benefits for a limited period while he is disabled by sickness or accidental injury, provided the fact be established by proof of acute or constitutional disease. The court says that there was no direct evidence concerning the cause of this defect in the plaintiff's vision, and that the defendant's counsel argued that the court could not take judicial notice that color blindness uniformly is caused by sickness, and that, without evidence to explain the cause of the plaintiff's condition, the jury could not lawfully or logically find that cause to have been sickness. Counsel said that this defect might have resulted from the plaintiff's advancing years, and, if so, the defendant was not liable. It did appear, however, that the plaintiff became color blind while in the defendant's employ. There was little, if any, evidence to justify a finding that this color blindness was the result of acute sickness; but could not the jury lawfully have found that it was caused by constitutional disease? The by-laws of the relief department recognized constitutional, as well as acute, disease as a satisfactory cause for a disability which would entitle the employee to its sick benefits, and the court may take judicial notice of the fact that this defect in vision occurs in about 5 per cent. of all human males in civilized countries, and that it is discovered in every period of life from infancy to advanced senility. The jury knew these facts, and were justified in finding that the plaintiff's optical weakness was inbred, but for some reason did not become evident during his earlier years. Incurable blindness has been judicially determined to be sickness. The plaintiff for the purposes of his vocation was blind, and, being blind, he was sick, within the meaning of the defendant's regulations. The court concludes, therefore, that a verdict in his favor was sustained by sufficient evidence.

Contamination of City Water-Supply by Ducks

(City of New York vs. Blum (N. Y.), 131 N. Y. S. 87)

A trial term of the Supreme Court of New York, Nassau County, holds that the plaintiff city was entitled to make regulations to prevent the contamination of its water-supply by ducks raised on the defendant's premises, or to have his raising of ducks enjoined. The court says that the city had been for many years the owner of "Smith's pond," as it was known, used for supplying its inhabitants with water for drinking purposes. The defendant had for about three years owned his premises on Pine brook, which empties into Smith's pond, and was engaged in raising ducks, with ponds on his premises which were at the beginning of this action fed by an artificial channel leading from Pine brook. The water was again returned to Pine brook by another artificial channel lower down the stream. Since the commencement of the action, this last-mentioned channel had been closed; and, although there was a perceptible flow from Pine brook into the defendant's ponds, there was no perceptible flow from these ponds back into that brook. The plaintiff sought to enjoin the raising of ducks on the defendant's premises, unless he would permit on his premises certain precautions to prevent the contamination of the plaintiff's water-supply, claiming that large quantities of duck excreta were carried from his premises into its pond from which its water-supply was obtained.

While some evidence was given on the defendant's behalf, tending to show that colon bacilli were found in the waters of Pine brook or stream above, as well as below, the defendant's ponds, the court thinks that it could not be seriously disputed that the result of such duck-raising industry at this point was, and would be, to greatly increase the amount of colon bacilli in such waters. For this situation the court thinks that the closing of the outlet from the defendant's ponds could not be considered an adequate remedy. More or less of the excreta must escape into the waters of the ponds and sooner or later be conveyed by flood and high water into the plaintiff's pond. This left the sole question to be determined: Was the defendant's use of the premises reasonable? If it was, then, notwithstanding that the plaintiff's source of water-supply might be polluted to some extent, the plaintiff's only remedy was to condemn the premises on which the contaminating industry was carried on. On the other hand, if such use of the defendant's land was not reasonable, then the plaintiff was entitled to the relief sought in this action.

The habits of ducks are so well known that the court has no hesitation in finding without proof that they spend a large part of their time in or on the water; and, necessarily, nearly all of their excreta is dropped in the water, thus rendering them more harmful to the water than other farmyard fowl or any domestic animal allowed to run at large on the farm. While duck raising is a legitimate business and ordinarily cannot be considered a nuisance, still, under certain surroundings and conditions, it would be an undoubted nuisance, the same as slaughter-houses and other industries which are prohibited in some localities. In this case the court is unable to find that the raising of ducks in the manner in which the defendant carried it on was a reasonable use of the stream in question. Under the regulations proposed by the plaintiff (not set out in the opinion) such use would be reasonable. That the stream in question was polluted by others was no defense for the defendant.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Bulletin of Johns Hopkins Hospital, Baltimore

February, XXIII, No. 252, pp. 33-64

1 James Parkinson. L. G. Rowntree, Baltimore.
2 *Is Anastomosis Between Portal Vein and Vena Cava Compatible with Life? B. M. Bernheim and C. Voegtlin, Baltimore.
3 Some Suggestions Regarding Mechanism of Resorption of Thyroid Colloid. P. G. Woolley, Cincinnati.
4 *Influence of Iodids on Catalytic Activity of Rabbit's Blood. A. Strauss, Baltimore.
5 *Consanguineal Diabetes Mellitus. N. B. Foster, New York.

2. Is Anastomosis Between Portal Vein and Vena Cava Compatible With Life?—A new modification of the operation for Eck fistula is described by Bernheim and Voegtlin which is superior as far as safety is concerned to the methods already known. In order to do away with practically all danger in cutting the opening they have lately devised a pair of scissors that are mathematical in the precision with which they cut. They are bayonet shaped, so that there is no difficulty or awkwardness in approaching the vessels which naturally lie quite deeply. The handles are four inches long with a one and a half inch drop to the blades, whose actual cutting edge is 1 cm. There are two separate "stops," which allow the blades to be opened only a certain distance. When they are opened to their fullest extent, their points are exactly one-quarter of an inch apart and their outer edges are almost parallel, as nearly parallel as an instrument maker can make them and still keep the inner edge for cutting purposes. Furthermore the blades are wedge shaped, so as to prevent all bleeding while entering the vessels. Raised to them is a round guide which projects out beyond the blade points one-half inch and is turned up at its ends. It is attached to the shank of the scissors. Where formerly they used single thread (Brainerd and Armstrong, size A or B), they now use double, threaded on the usual curved No. 3 French needle. The reason for this is that the double thread almost entirely fills the needle holes and is, of course, stronger. They found that Eck fistula dogs, if kept on a proper diet, may live without being influenced by the operation for a long time. Certain hepatic functions are decreased in Eck fistula animals: tolerance for sugars, formation of bile, hemolytic function of the liver. Proof is furnished for the assumption that the application of the operation to the human being is perfectly compatible with life.

4. **Influence of Iodids on Catalytic Activity of Rabbit's Blood.**—It was found by Strauss that potassium or sodium iodid fed to rabbits in large doses may lead to an increase of the catalytic activity of the blood. This increase is not due to the presence of the iodid in the circulating blood. Withholding the food may lead to an increase in the catalytic activity of the rabbit's blood, while resumption of feeding is associated with a drop in its catalytic activity.

5. **Consanguineal Diabetes Mellitus**—Two families have come to Foster's attention in which two or more children of the same parents have developed diabetes in early youth.

Virginia Medical Semi-Monthly, Richmond

January 26, XVI, No. 20, pp. 493-520

6 *Fifty Cases of Goiter Operated On at St. Luke's Hospital. S. McGuire, Richmond.
7 Mental Defectives. W. F. Drewry, Petersburg.
8 Later Experiences with Salvarsan at U. S. Naval Hospital, Norfolk, Va. G. B. Trible, Norfolk.
9 Use of Salvarsan at Army Hospital, Fortress Monroe, Va. F. P. Reynolds, Fortress Monroe.

6. Abstracted in THE JOURNAL, Feb. 3, 1912, p. 371.

Archives of Pediatrics, New York

January, XXIX, No. 1, pp. 1-78

10 Hospitals for Care of Infants and Children and Methods of Prevention of Infection. H. Kopilk, New York.
11 *Diazo Reaction in Scarlet Fever and Serum Sickness. S. S. Woody and J. A. Kolmer, Philadelphia.
12 Anesthesia in Surgery of Childhood. F. W. Pinneo, Newark, N. J.
13 *Dietetic Treatment of Infantile Tetany. C. G. Grulee, Chicago.
14 Relation of Social and Economic Conditions to Infant Morbidity and Mortality. J. Levy, Newark, N. J.
15 *Is Milk of Eclamptic Mothers Toxic? C. A. Frost, Utica, N. Y.

11. **Diazo Reaction in Scarlet Fever.**—The Diazo reaction was found positive by Woody and Kolmer in 17.3 per cent. of scarlet fever and 12.9 per cent. of diphtheria patients during the first week of these infections. It is during this week that scarlatiniform serum rashes are so apt to develop and make a differential diagnosis from scarlet fever quite difficult. The percentage of positive reactions in serum sickness was much lower. A few positive reactions were found averaging 10.8 per cent. for all kinds of rashes, but many of these positive results may have been due to diphtheria. The value of the Diazo reaction in differential diagnosis is held to be very slight by the authors, not because the reaction is occasionally present in a serum rash case, but because the percentage of reactions in scarlet fever and diphtheria is comparatively low and inconstant, so that a negative reaction in a case presenting a scarlatiniform rash is of little value in excluding scarlet fever. Since the reaction is positive in 75 per cent. of cases of measles a negative reaction in a case presenting a morbilliform rash is considered by the authors to be of value in differential diagnosis.

13. **Dietetic Treatment of Infantile Tetany.**—Without having previously read Finkelstein's statement, Grulee decided to determine what effect, if any, the removal of the salts, and especially the calcium from the food would have on the cases of infantile tetany. This suggested itself to him because of the recent tendency in literature to connect in some way this disorder with a disturbance of calcium metabolism, the exact nature of which had and still has escaped our knowledge. Though his observations fall far short of proving any relation between infantile tetany and the calcium content of the food, they tend, he thinks, to confirm the statement of Finkelstein that the whey is at fault. In looking over his four cases Grulee was struck by the fact that a food containing no whey should be so nonirritating, and that with such a striking regularity there was seen an increase in the tetanic condition on the addition of whey to the food. Therefore, he believes that he is justified in drawing the conclusion that the curds of milk from which the whey was removed were not irritating in these cases. In the four cases mentioned the food was simply a mixture of curds of skimmed or whole milk, as indicated, which had been precipitated with rennet, mixed with barley water. This arrangement proved very unsatisfactory, for the reason that curds would precipitate to the bottom of the bottle and oftentimes fall into large clumps, which it was impossible to get through the hole of an ordinary nipple unless this was enlarged. After some experimentation, especially with gelatin in various concentrations, Grulee found that a solution of arrowroot flour to the strength of two drams and a half (a level tablespoonful) to the quart, makes the best medium in which to keep the curds suspended. It is very necessary that the curding be done carefully.

The following method has been used in the Provident Hospital diet kitchen with greatest success: The milk is brought to a boil and then cooled to 107 F. Chymogen, a teaspoonful to the quart, is then added and the temperature kept at 107 F. for half an hour. The milk is then strained through a cheesecloth and allowed to drain for one hour. The curds are then put through a finely meshed sieve. It would seem that the whey was an irritating food in these cases. Summarizing, Grulee says that whatever the direct cause of tetany may be, it is intimately connected with metabolic processes, and that there is in the whey some material which acts in an irritating manner, producing an increase of the irritability of the peripheral nerves. That removal of whey from the food gives a food which is non-irritating in these cases, but which frequently must be supplemented with sedatives in order to bring about a proper reduction of the spasmophilic condition.

15. **Is Milk of Eclamptic Mothers Toxic?**—Frost feels that the milk of an eclamptic mother is toxic, even more than her blood, and that a seizure coming on, just prior to the secretion of milk, makes it doubly toxic, as nature takes this mode of elimination; therefore he forbids a nephritic or eclamptic mother to nurse her new-born infant.

Washington Medical Annals, Washington, D. C.

January, X, No. 6, pp. 309-419

16 Tendency to Exaggeration and Complexity in Modern Medicine. W. M. Barton.
17 Hypertrophied Ova of Birds. D. S. Lamb, Washington, D. C.
18 Vaccine Therapy in Diseases of Ear, Nose and Throat. V. Dabney, Washington, D. C.
19 Rational Treatment of Hysteria Without Minute Psychoanalysis. T. A. Williams, Washington, D. C.
20 Historic Synopsis of Development of Hypodermic Medication. C. A. Pfender, Washington, D. C.
21 Healing Forces of Nature in Disease. G. Werber, Washington.
22 Case of Fatal Anemia from Toxemia of Pregnancy, Treated by Direct Blood Transfusion. W. W. Wilkinson, Washington, D. C.

American Journal of Medical Sciences, Philadelphia

February, CXLIII, No. 2, pp. 157-312

23 *Movable Cecum. J. Sailer, Philadelphia.
24 Lumbar Type of Intermittent Claudication. J. R. Hunt, New York.
25 *Acute Yellow Atrophy of Liver in Children; Report of Case. J. Phillips, Cleveland.
26 *Treatment of Nocturnal Enuresis in Children. J. Ruhräh, Baltimore.
27 Some Applications of Crehore Micrograph, with Special Reference to Recording of Heart Sounds. J. H. Austin, Philadelphia.
28 Sarcoma of Tongue and Conditions Which Simulate It. E. M. Foote, New York.
29 Influence of Oral Sepsis on Digestive Disorders. G. M. Niles, Atlanta.
30 *Prognostic Value of Urochromogen and Diazo Reactions in Pulmonary Tuberculosis. R. C. Hefflebower, New Mexico.
31 Agar as Vehicle in Intestinal Therapeutics. M. Einhorn, New York.
32 *Reactions Induced by Antithyroid Vaccination. H. Albert and A. M. Mendenhall, Iowa City.
33 Brain Tumor Successfully Located by Means of Roentgen Rays. J. H. Lloyd and L. J. Hammond, Philadelphia.
34 Roentgen Rays in Hypertrophied Prostate. J. W. Hunter, Norfolk, Va.
35 *Cancer of Ovary in Girl Aged 11 Years. F. H. Lahey and S. R. Haythorn, Boston.
36 *Physical Exercise and Blood-Pressure. E. O. Otis, Boston.

23. **Movable Cecum.**—Sailer says he can easily understand why the fixation of the cecum should prevent recurrent attacks of colic, if they are due to temporary constipation or restore the contractibility of an atonic colon, and, therefore, purely on theoretical grounds, it would seem desirable at the time of the operation to correct all displacements, kinks, or folds that are giving rise, or may in the future give rise to partial or complete obstruction. He is convinced that many cases of movable cecum are wrongly diagnosticated chronic appendicitis, that in these cases the removal of the appendix, even if it shows signs of inflammation, is not followed by the relief of the symptoms, and, therefore, some other etiologic factor must be active. In no less than three of the five cases reported by him had the appendix been removed, and in every instance described as the seat of a chronic inflammatory process, and yet in none of those three was there any relief

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afforded, and in one, subsequent operations were equally futile. He regards it as likely that the essential lesion in these cases is the atony which results from the partial and occasional obstruction, and agrees with Fischler that the term typhlatonia is better than cecum mobile.

25. **Acute Yellow Atrophy in Children.**—Phillips' patient, a female child, aged 5 years, was admitted to the hospital, Nov. 3, 1909, suffering from intense jaundice associated with stupor. Neither the family nor the personal history threw any light on the case. One week before admission she began to lose her appetite, and vomited several times a day, the last time she vomited being two days before coming to the hospital. During this time the child became more deeply jaundiced, the stools were clay colored and the urine a deep yellow color. The parents stated that they had not noticed any blood in the vomitus or in the stools. During the last twenty-four hours she had been unconscious. Physical examination showed a well-developed and quite well-nourished child, tossing about restlessly in bed. The skin and mucous membranes were deeply jaundiced, a small ecchymotic area was noticed in the left lower quadrant of the abdomen, and another on the outer side of the right arm just above the elbow. There were numerous small petechiæ over the lower extremities below the knees. The child was unconscious, but seemed hypersensitive when touched. The pupils were widely dilated and reacted sluggishly to light. The ears, nose and throat were normal, but the tongue was heavily coated with a yellowish-white fur. Slight general glandular enlargement was noted. The temperature was 96.2 by rectum, the respirations were thirty to the minute, and somewhat shallow and irregular. Examination of the lungs revealed nothing abnormal. The pulse-rate was sixty-four; with the exception of some arhythmia there was nothing of importance in the examination of the heart.

The abdomen was somewhat distended, especially in the lower part, this being due to a full bladder. The spleen could be felt. The lower edge of the liver was not palpable; the upper border of hepatic dulness began at the fourth rib in the right mammary line and at the sixth rib in the axillary line. The tendon reflexes were exaggerated and there was some spasticity of the legs. The urine was dark yellow in color; specific gravity, 1.017, alkaline, contained a faint trace of albumin and bile was present in large quantity. The microscopic examination of the centrifugalized sediment showed many epithelial and hyaline casts and many leucin crystals. The leukocyte count was 22,400. The child vomited shortly after admission to the hospital, the vomitus being mixed with dark clotted blood. The stomach was then washed out and numerous blood clots came away in the washing.

The child died two hours later. Anatomic diagnosis: Acute yellow atrophy of the liver icterus, petechial hemorrhages (skin, omentum, mesentery, mediastinal tissues, epicardium, pleura, lung, Peyer's patches, mucous membrane of the stomach), cloudy swelling of heart, kidney, pancreas and adrenals, stenosis of the cystic duct, thyroid hyperplasia.

26. **Nocturnal Enuresis in Children.**—In a small series of unselected cases Rührah used dried thyroid. In a small proportion of cases in which there were more or less marked signs that might be attributed to thyroid insufficiency, the results were quite remarkable. These were all children with adenoids and enlarged tonsils, or in some cases children in whom the adenoids and tonsils had been recently removed. In this series of cases the effect was obtained promptly or not at all. In every instance in which a favorable result was obtained a marked difference was noticed after the administration of one or two doses of the drug and in all cases within a week. The undersized children gained weight rapidly, nor has it been necessary to continue the thyroid over long periods of time. In several instances in which the children had high arched palates but no subnormal temperature, the thyroids had no effect whatever.

30. **Diazo Reaction in Tuberculosis.**—In Heflebower's series of thirty-nine cases there were positive Diazo reactions in 29.1 per cent.; while 66.6 per cent. gave positive urochromogen tests. There was a positive Diazo reaction in none of the ambulant cases, in 15.7 per cent. of the semi-bed cases and 42.8 per cent. of the bed cases. The urochromogen test was positive in 45.4 per cent. of the ambulant cases, 47.3 per cent. of the semi-bed cases and 80 per cent. of the bed cases. Both reactions occur more frequently in the severe cases and with still greater frequency in the severest cases. The Diazo reactions were more intense, and the urochromogen test even more so, in the more severe cases. Not only does the urochromogen reaction occur in a greater number of cases, but it occurs far more constanly than does the Diazo reaction. Therefore Heflebower concludes that the frequency and constancy of the appearance of the Diazo and urochromogen reactions in the urines of cases of pulmonary tuberculosis is an index to the severity of the condition, a constant negative result pointing to a case that is doing well, while a constant positive result indicates a progressively downward case. The urochromogen test occurs more frequently, and is more constant than the Diazo reaction. It is, therefore, a better index to the condition of the patient than the Diazo reaction. The intensity of both the Diazo and urochromogen reactions is of great import as an index to the severity of the condition, especially as a method of determining the difference in prognosis in cases which show the reactions constantly.

32. **Antityphoid Vaccination.**—Albert and Mendenhall found that the injection of typhoid vaccines induces a local reaction in all cases and a general reaction in some cases. A previous attack of typhoid fever apparently causes the reaction to be more severe than is observed in individuals who have not had typhoid fever. Antityphoid vaccination causes a marked increase in the specific agglutinins, opsonins and bacteriolysins. The injection of typhoid vaccines causes a marked polymorphonuclear neutrophil and large mononuclear leukocytosis. The marked increase (both absolute and relative) of the large mononuclear leukocytes in the peripheral blood is the only leukocytic change which is common to both clinical typhoid fever and antityphoid vaccination. Such occurrences suggest that these leukocytes have something to do with the formation of antibodies concerned with the production of antityphoid immunity.

35. **Cancer of Ovary.**—This was a rapidly growing, malignant tumor, which produced very extensive metastases of lymphatic distribution. The structure was that of an epithelial growth of a round-or-oval-celled type, which always reproduced the same picture and never developed cylindrical cells or became scirrhus. These points, added to the fact that the growth was first seen in the ovaries, leads to the supposition that it was primary in one or both of them. Most interesting were the cells in the mesenteric veins and in the liver, which appeared to be free tumor cells. In the mesenteric veins there seemed to be little doubt that they were tumor cells, for they exactly resembled those in the lymph spaces, had nucleoli and were larger than desquamated or wandering endothelial cells. In the liver they were not so well stained, but could be differentiated from displaced liver cells, in that they had larger nuclei and were free from fat globules and pigment granules, while there was abundant pigment in the neighboring liver cells. Those found in the liver sinusoids were distinguished from wandering endothelial cells with difficulty, their greater size being the only obvious point of difference. None of these cells were found in the lung capillaries.

The customary teaching on these tumors which metastasize wholly by the lymphatics is that the cells do not gain entrance to the blood-stream; but granting that the cells observed were tumor cells, Lahey and Haythorn say that another explanation must be sought in this case. Three possibilities have suggested themselves to the authors: (1) That the blood had closely associated with it (maybe with the red cells) an immune body which brought about the destruction of the tumor cells, but did not diffuse through to the lymph. (2) That the tumor cells were carried to the liver by the portal circulation and destroyed. (3) The most likely possibility of all is that the question was a quantitative one, the lymphatics in the neighborhood of new growth being filled with great numbers of tumor cells, while some search was required to find those in the veins.

36. **Physical Exercise and Blood-Pressure.**—In 126 cases of moderate general exercise a mixture of various kinds, as in class work, ninety-seven, or 77 per cent. showed a rise of blood-pressure immediately after the exercise. In nine, or 8.1 per cent., there was no difference between the first and second measurements; and in twenty cases, or 16 per cent., there was a fall in the second measurement. With the third test, taken from three to twenty minutes after the exercise, in some cases after a simple rest and in others after the bath, out of fifty-nine men, forty-five, or 76 per cent., showed either a fall to the initial measurement (supposedly the normal), or to a subnormal pressure, generally the latter. Otis concludes that physical exercise in the majority of cases, of whatever nature it may be, excessive, severe and long continued, or more gentle and moderate, causes a rise in the systolic blood-pressure, the maximum occurring sometimes in the systolic blood-pressure during the effort. As fatigue sets in and advances, the pressure falls to normal or subnormal. If the exercise ceases at a time when the increased pressure exists, which is indicated by taking it immediately on stopping exercise, the return toward the normal takes place rapidly, generally within a comparatively few minutes, as was the case with Otis' observations. Or, if it ceases after the fall to subnormal has occurred, as in the case of more extensive fatiguing and long-continued exertion, then the return *upward* to the normal is slower, depending on the degree of fatigue and exhaustion.

Wisconsin Medical Journal, Milwaukee

January, X, No. 8, pp. 433-490

37 Rachiocentesis. W. F. Lorenz, Mendota.
38 Impaling Injuries of Pelvis. C. J. Habhegger, Watertown.

Journal of South Carolina Medical Association, Seneca

January, VIII, No. 1, pp. 1-30

39 Pneumonia. W. M. Lester, Columbia.
40 Treatment of Pneumonia. W. J. Burdell, Camden.
41 Pneumonia. W. A. Woodruff, Catechee.
42 Bronchopneumonia. H. L. Shaw, Fountain Inn.

Monthly Cyclopedia and Medical Bulletin, Philadelphia

January, XV, No. 1, pp. 1-64

43 *Uses and Limitations of General Anesthesia as Produced by Subcutaneous and Intravascular Injections. W. W. Babcock, Philadelphia.
44 *Parental Alcoholism as Factor in Mental Deficiency of Children. A. Gordon, Philadelphia.
45 Physiologic Treatment of Constipation and of Mucomembranous Enterocolitis. H. Nepper, Paris, France.
46 *General Paresis, Tabes and Cerebrospinal Syphilis. E. D. Fisher, New York.
47 General Practitioner or Optician. E. M. Alger, New York.

43. Abstract in THE JOURNAL, June 3, 1911, p. 1677.

44. **Parental Alcoholism in Mental Deficiency of Children.**—Gordon's study embraces 298 cases of mental deficiency observed in 117 families. Only the living members were taken into consideration; the mortality in each case of the families studied was great; death occurred at a very tender age; some children died early in life and the living presented mental and physical stigmata of degeneracy. Therefore, one must logically conclude that the effect of alcoholism on the offspring is most disastrous. Gordon is led to conclude that alcoholism is unquestionably one of the direct causes of imbecility, idiocy and feeble-mindedness in the offspring. The pictures built up from the collected facts show that alcoholized individuals procreate degenerate and mentally feeble children. These in their turn, if permitted, continue the chain of the pathologic condition and so on endlessly unless the chain is interrupted. One such family, for example, is capable of throwing into the community dozens of useless or dangerous individuals, who, if capable of multiplying, will produce their like.

The mental inferiority of such units leads the community backward and its intellectual *niveau* is thus lowered. A mentally deficient individual is unable to adapt himself to his surroundings and his efforts in that direction are futile. Moreover, he becomes dangerous to society as his conceptions of obligations and of conventional laws are primitive, undeveloped and frequently perverted. It may be of interest to mention the results of experiments conducted on animals with reference to the question of germ-plasm deterioration, which is discussed here from a psychiatric standpoint. There is no doubt in Gordon's mind that ethyl alcohol taken into the organism in any form and allowed to act for some time can produce changes in the germ cells which influence many generations of descendants. These changes are multiple, ranging from an ordinary nervous disturbance to an anomaly and deformity and to the production of fetuses which die *in utero*.

Heredity, he says, consists of the transmission of physical and mental characteristics of parents to the offspring by means of the energy of the nuclear plasm of the germ cells. After sexual union has taken place, a combination of the hereditary characteristics of both cells follows. Should any change occur in the qualities of the plasm of the germ cells, a lasting alteration will develop in the hereditary energies of these cells. Alcohol is one of the agents capable of producing the blastophthoria of Forel or germ deterioration, which, in its turn, causes many anomalies and defects involving the embryonal development of various organs. Blastophthoria or germ deterioration can be perpetuated for many successive generations through habitual hereditary transmission.

46. **General Paresis, Tabes and Cerebrospinal Syphilis.**—In Fisher's opinion salvarsan is probably as ineffective in the parasyphilitic affections as mercury and iodid of potassium.

Journal of Oklahoma State Medical Association, Muskogee

February, IV, No. 9, pp. 353-396

48 Ankylostomiasis. A. C. Hirshfield, Norman.
49 Plea for Radical Herniotomy with Local Anesthesia. L. F. Watson, Oklahoma City.
50 Cure of Opium and Morphin Habitués. W. E. Rammel, Bartelsville.
51 Various Aspects or Forms of Icterus. H. M. Williams, Wellston.
52 Rabies; Report of Case. G. A. Morrison, Poteau.
53 Iritis. W. A. Cook, Tulsa.
54 Obstetric Record of Forty Years. W. Nairn, Alluwee.
55 Early Diagnosis and Treatment of Meningitis. C. J. Fishman, Oklahoma City.

Boston Medical and Surgical Journal

February 8, CLXVI, No. 6, pp. 195-234

56 *Responsibility of Medical Profession for Early Diagnosis and Treatment of Pulmonary Tuberculosis. J. B. Hawes, Boston.
57 *Influence of Race in Prevalence of Tuberculosis. F. P. McCarthy, Boston.
58 Fly Problem at Worcester State Hospital, Massachusetts, 1911. S. T. Orton, Boston.
59 Inefficiency of Ordinary Bed Rest; Its Correction with Thigh Support. L. T. Brown, Boston.

56. **Pulmonary Tuberculosis.**—At the Massachusetts General Hospital and at the Boston Consumptives' Hospital, where there is a thorough routine physical examination of every patient and the sputum, Hawes says, consumption is diagnosed promptly, as shown by the fact that 279 out of 300, or 90 per cent. of patients, were diagnosed at once, or within one week.

At the same institutions, though less so at the latter, there is little evidence of much in the way of "early" diagnosis. Out of 200 patients diagnosed as having pulmonary tuberculosis, fifty-seven were found to be incipient, but of those only thirty-four were so called without a positive sputum examination, while during the same period at the Massachusetts General Hospital, at least, the number of cases of "debility," "anemia," "Ph?" and other somewhat vague diagnoses was very large. Out of 500 patients now at the various sanatoria in Massachusetts, over 75 per cent. of whom are in the advanced or moderately advanced stages of the disease, 285 were told by the first physician whom they consulted that they did not have consumption.

Of these 500 patients, 331 stated that they went to a physician as soon as they suspected that they had any lung trouble. This might have been late or early in the disease, according to the intelligence of the patient. Only fifty-four waited over a month before consulting a doctor. Out of eighty-one patients who consulted a doctor because of a hemorrhage, thirty-nine were told that it was not due to consumption. Of the 285 patients told that they did not have consumption, seventy-three were told by their doctors that they had bronchial trouble, bronchitis, cold or grippe; fifty-eight that they were run down and needed rest; and forty-eight that they had a "spot on the lungs," weak lungs, lung trouble, or that "their lungs were affected." These 500 patients visited 1,128 doctors in order to get a diagnosis. Of these 500 patients, 207 were told at once that they had consumption, seventy-six within a month, 148 waited over a month, and

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forty-six were *never told*. One hundred and seventeen patients applied for admission to a sanatorium at once, eighty-eight in one month or less, while 145 patients waited six months or more before applying.

57. **Influence of Race in Prevalence of Tuberculosis.**—As a result of clinical and pathologic observations of tuberculosis in different races, McCarthy draws the following conclusions:

1. That a definite resistance has been acquired by certain races as a result of contact with tuberculosis over a long period of time, brought about by urbanization. 2. That the Indian and negro races have acquired as yet very slight resistance against the disease, and preventive measures are practically the only means of stemming the mortality. 3. That the present high mortality rate among the Irish can be brought to a considerably lower level by the educational and preventive measures now in vogue. 4. That in the fight against the disease we have on our side the knowledge that it is possible we may raise the resisting power of a race against tuberculosis as shown by the relative low mortality in the Jewish people against the high rate among the aboriginal races.

Iowa Medical Journal, Des Moines

January, XVIII, No. 7, pp. 307-356

60 Pathology of Carcinoma of Uterus. D. J. Glomset, Des Moines.
61 Prophylaxis and Cure of Carcinoma of Uterus. H. A. Minassian, Des Moines.
62 Care of Expectant Mother. M. Taylor, Ottumwa.
63 Labor in Deformed Pelvis and Its Treatment. H. M. Stowe, Chicago.
64 Cystoscopy as Aid to Diagnosis. R. A. Weston, Des Moines.
65 Who Is to Blame? J. H. Goad, Ellston.
66 Division of Responsibility in Referred Cases. J. W. Kime, Fort Dodge.

Medical Record, New York

February 10, LXXXI, No. 6, pp. 251-300

67 Practical Utility of Distinguished Consultant. C. K. Austin, Paris, France.
68 Suggestion for Improved Method of Using Radium. R. Abbe, New York.
69 Tuberculous Peritonitis; Sarcoma of Kidney. H. B. Sheffield, New York.
70 Diagnosis and Treatment of Intranasal Suppuration. J. D Donelan, London.
71 Tricuspid Regurgitation and Stern's Posture as Aid in Its Diagnosis. L. B. Sachs, New York.
72 *Treatment of Arthritis Deformans in Montefiore Home. S. W. Boorstein, New York.
73 Significance of Splashing Sound in Gastro-Intestinal Canal. M. I. Knapp, New York.

72. **Treatment of Arthritis Deformans.**—The treatment as outlined by Goorstein is divided into (1) that of the general condition and (2) that of the joints. General treatment: Since infection plays an important part in bringing on the disease and aggravating the condition, they look first for the source of the infection and examine the mouth for carious teeth, pyorrhea alveolaris, and diseased tonsils and remove the source of infection when found. The digestive tract is very carefully attended to, since gastrointestinal disturbances aggravate the symptoms, and whenever patients are constipated they complain of marked pain and discomfort in the joints. The urine is examined two or three times a week and when indican is found in large quantities a high enema is given. As a routine measure each patient receives two or three enemata a week, as a result of which the pain in the joints is greatly relieved.

Each patient as soon as he enters the orthopedic department has his casts, *x*-ray, and photograph taken and a careful description is made of the joints on the question blank so that a good record of the changes can be kept. Then the patients are given the following treatment: Baking followed by massage three times a week; "steam boxes" on the intervening days; light baths twice a week; Bier's hyperemia every day for six or twelve hours; enemata twice a week; exercises daily, and static electricity three times a week. Casts are taken every three to four months. For carrying out this treatment they have given nurses special training and have elicited their personal interest in this special kind of work.

St. Paul Medical Journal, Minn.

February, XIV, No. 2, pp. 73-128

74 Diagnosis and Treatment of Diseases of Biliary Tract. M. H Richardson, Boston.
75 Mediastinal Tumors; Report of Two Cases. L. D. Bristol, St. Paul.

Journal of Experimental Medicine, New York

February, XV, No. 2, pp. 107-204

76 *Behavior of Chicken Sarcoma Implanted in Developing Embryo. J. B. Murphy and P. Rous, New York.
77 *Experimental Pneumonia by Intrabronchial Insufflation. R. V. Lamar and S. J. Meltzer, New York.
78 *Production of Passive Hypersensitiveness to Tuberculin. C. R. Austrian, Baltimore.
79 *Studies on Immunity in Cancers of White Rat. I. Levin, New York.
80 Pressor Influence of Augmented Breathing. C. J. Wiggers, K. C. Eberly and H. L. Wenner, Ann Arbor, Mich.
81 Morphologic and Pathogenic Variations in Treponema Pallidum. H. Noguchi, New York.
82 *Chemical Studies on Intestinal Infantilism. I. Endogenous Metabolism: Kreatinin, Kreatin, Uric Acid. F. H. McCrudden, New York.
83 *Idem. II. Relation of Endogenous to Exogenous Metabolism, Nitrogen and Sulphur Distribution and Calorimeter Experiments. F. H. McCrudden and H. L. Fales, New York.

76. **Behavior of Chicken Sarcoma.**—The direct inoculation of a sarcoma of the fowl into the developing chick embryo or its membranes has yielded growths in many cases. The neoplasms developing are spindle-celled sarcomata, remarkably uniform in structure and similar to those in the adult fowl, except that in the embryo the neoplastic cells are often extremely long and slender and the structure of the growth is very loose. The membranes adapt themselves in a remarkable way to the support of the tumors. In them, the growth is seldom invasive; and while regional metastases are occasionally seen, none occur by the blood-stream, despite the predilection of the growth for this path of distribution in adult hosts. In the more resistant structures of the embryo itself, an invasive extension of the sarcoma occurs. Growths originally in the yolk-sac outside the chick may be carried into the latter during the course of development. Secondary growths in the viscera may cause the death of the host some weeks after hatching.

In order to produce tumors in the embryo, the sarcoma cells or the agent engendering the growth must be brought into a direct association with the mesodermal tissues. This necessity is responsible for interesting differences in the location of the growths in the various membranes. The sarcoma will grow in the membranes of pigeon or duck embryos, whereas in adults of these species it will not do so; and in chicken embryos of different varieties, it grows uniformly well, a finding not obtained in adults. In embryo hosts of all the sorts mentioned, there is a total absence of the cellular reaction which in adults indicates resistance to the tumor's development. Relatively speaking, the embryo seems much more favorable than the adult as a host for the sarcoma.

77. **Experimental Pneumonia by Intrabronchial Insufflation.**—By intrabronchial insufflation of pure cultures of pneumococcus in dogs, the authors produced experimental pneumonia successively in forty-two cases, with a mortality of at least 16 per cent. The fatal cases resembled closely lobar pneumonia in man. In the non-fatal cases the pathologic and bacteriologic findings were again in accord with the findings in man. Clinically, however, the cases of non-fatal experimental pneumonia run a milder and shorter course than in man. In a few instances, lobar pneumonia has been produced experimentally also with the *Pneumococcus mucosus* and with Friedlander's pneumobacillus. The anatomic findings in these experiments have shown some characteristics agreeing with the findings in the pneumonias of man produced by these organisms. The quantity of the injected culture seemed to have a definite influence on the outcome of the disease; in the fatal cases larger quantities of the culture had been injected. The animals were neither selected nor prepared in any manner. The experimental success did not, therefore, appear to depend on the degree of resistance of the individual hosts. It is suggested that the uniformly successful results of the experiments were due to the obliteration of a large number of bronchi by the injected culture, through which mechanical effect a favorable opportunity was provided the pneumococci to develop and display their pathogenic activities, consisting in the calling forth of a characteristic local, more or less effective, widespread, inflammatory reaction of the lung tissue.

78. **Production of Passive Hypersensitiveness to Tuberculin.**—Definite proof was obtained by Austrian as the result of experiments, that tuberculin hypersensitiveness in man is a condition of true anaphylaxis and that in cases of tuberculin "idiosyncrasy," at least, "sensibilisin" may be present in the circulating blood.

79. **Immunity in Cancers of White Rat.**—Growth of cancer, according to Levin, presents a loss of equilibrium between the inhibitory power of the parenchymatous cells and the proliferating power of the cancer cells. The value of his investigation consists in the fact that it presents the first experimental proof of the existence of a local "precancerous stage." It also shows that there are still many points in the etiology of cancer which it will be impossible to elucidate through animal experimentation.

82. **Chemical Studies on Intestinal Infantilism.**—In three cases of intestinal infantilism studied by McCrudden the creatinin excretion was more irregular than normally, and the creatinin coefficient was low. Creatin was found in the urine on a creatin-free diet. The sum of creatinin and creatin was also irregular. The endogenous uric acid was irregular from day to day. The creatin excretion was apparently lower on a high fat diet than on a high carbohydrate diet.

83. **Idem.**—The relation of endogenous to exogenous metabolism and nitrogen and sulphur distribution was studied by the authors on the same three patients as those described in a previous paper, and on a normal boy for comparison. The presence of creatin, and at one time, of acetone, in the urine of the abnormal cases, and of acetone in the breath of one patient and the very large amounts of various elements lost through the feces of these patients, made it seem possible that the lack of absorption was leading to some condition of starvation that was responsible for the arrest of development. Calorimeter experiments proved: (1) That the metabolism, as a whole, is on a low plane, as was indicated by the fact that the nitrogen excretion per square meter of body surface was at about the starvation value; (2) that the endogenous metabolism was low, as was shown by a low creatinin coefficient; (3) that the distribution of nitrogen and sulphur among the different compounds in the urine was in the ratio found in normal persons only when the metabolism was on a high plane.

From the data obtained, the authors feel justified in suggesting that possibly some fundamental defect exists that prevents the body from engaging in a more active metabolism. Or there may be a long continued state of undernutrition due to poor absorption, which, at first, leads only to a low exogenous metabolism, but in time is followed by a readjustment whereby the endogenous metabolism gradually falls to a lower plane, and finally exogenous and endogenous metabolism come to the normal balance in such a way that nitrogen and sulphur distribution again become normal. Only one instance of previous study of the nitrogen and sulphur distribution after a very long period of low nitrogen diet has come to their attention. That the endogenous metabolism may show a gradual decrease in starvation is indicated by the gradual lowering of the creatinin excretion. A final possibility is that one or more of the amino-acid complexes of the food protein are so changed by bacterial action in the intestines that they cannot be utilized by the body. In three cases of intestinal infantilism, the excretion of nitrogen in the urine per square meter of body surface was low. The heat radiation was normal. In spite of the fact that the absolute quantity of nitrogen was low, the distribution of nitrogen and sulphur among the various nitrogen and sulphur constituents of the urine was in the normal ratio. The ammonia excretion was normal. The ethereal sulphates were slightly increased. The respiratory coefficient showed that the supply of glycogen had not been used up after eighteen hours' starvation.

Kentucky Medical Journal, Bowling Green

February 1, X, No. 3, pp. 93-148

84 *Physician's Duty as Educator in Preventive Medicine. J. W. Ellis, Masonville.
85 Treatment Following Prostatectomy. L. W. Bremerman, Chicago.
86 Newer Methods of Treatment of Diseases by Hypodermic Medication. C. Pope, Louisville.
87 Deep Injections of Alcohol for Persistent Neuralgia. E. A. Stevens, Mayfield.
88 Prognosis and Treatment of Typhoid. C. R. Garr, Flemingsburg.
89 Serum and Bacterin Therapy. W. M. Floyd, Henderson.
90 *Importance of Early Diagnosis in Malignant Disease. W. H. Wathen, Louisville.
91 Importance of Early Diagnosis in Malignancy. A. L. Thompson, Madisonville.
92 *Importance of Early Diagnosis of Intestinal Obstruction. P. C. Layne, Ashland.
93 *Early Diagnosis of Ano-Rectal Disease. J. G. Carpenter, Stanford.
94 Importance of Early Diagnosis of Ectopic Pregnancy. H. E. Prather, Hickman.
95 *Diagnosis of Head Injuries. A. D. Willmoth, Louisville.
96 Importance of Early Diagnosis of Placenta Prævia. J. T. Reddick, Paducah.

84, 92 and 93. Abstracted in THE JOURNAL, Nov. 18, 1911, pp. 1719 and 1720.

90 and 95. Abstracted in THE JOURNAL, Nov. 11, 1911, p. 1635.

New York Medical Journal

February 3, XCV, No. 5, pp. 209-260

97 Relief of Prostatic Obstruction. J. B. Squier, New York.
98 Complete Amputation of Penis by Jealous Wife. G. F. Lydston and H. F. Steere, Chicago.
99 Treatment of Diseases of Posterior Urethra. J. A. Hawkins, Pittsburgh.
100 Case of Keratitis Rosacea. B. Chance, Philadelphia.
101 New Ideas Concerning Phymatiasis (Tuberculosis). A. Rose, New York.
102 Alcohol and the Individual. H. Brooks, New York.
103 Alcohol in Its Relation to Stomach and Liver. M. M. York, Flushing, N. Y.
104 Serum Treatment of Hemorrhage and Blood Dyscrasias. A. W. Lescohier, Detroit.
105 Responsibility of Medical Profession for Early Diagnosis and Prompt Treatment of Pulmonary Tuberculosis. E. O. Otis, Boston.
106 *Explanation of Positive Wassermann Test Following Some Cases of Anesthesia. S. L. Cherry, Philadelphia.

February 10, XCV, No. 6, pp. 261-312

107 Alcohol a Menace to Soldier; Privileges of Post Exchange. L. L. Seaman, New York.
108 Cancer of Rectum and Lower Sigmoid; Report of Unique Case. M. F. Porter, Fort Wayne, Ind.
109 Atypical Case of Hyperthyroidism. J. S. Horsley and R. M. Rosebro, Richmond.
110 Case of Puerpura Hemorrhagica. J. M. Wallfield, New York.
111 Salvation of Tuberculous. C. P. Wertenbaker, Norfolk, Va.
112 Vaccine Therapy in Diseases of Ear, Nose and Throat. V. Dabney, Washington, D. C.
113 Perforation of Gravid Uterus; Its Prevention by Proper Technic. S. Wiener, New York.
114 Two Hundred Cases of Pyosalpinx. H. A. Duncan, Philadelphia.
115 Tumor of Brain. H. Climenko, New York.
116 Insanity in Children. C. Holmes, New York.

106. **Positive Wassermann Test Following Anesthesia.**—Cherry maintains that anticomplementary bodies are formed in the blood of dogs during chloroform anesthesia, and these cannot be removed entirely from the serum by heating it to 55 C. for thirty minutes. It is evident that when antigen, possessing anticomplementary properties in undue amount, is combined with a serum possessing anticomplementary properties, the total of the two may be sufficient to cause more or less fixation of complement in the Wassermann test. The purer the antigen is, therefore, the more strongly a positive Wassermann test points to syphilis. No antigen, however made, is permanent, and the main thing is to use an antigen as strongly antigenic and as weakly anticomplementary as possible.

Annals of Ophthalmology, St. Louis

January, XXI, No. 1, pp. 1-207

117 Oxycephaly and Optic Atrophy. A. Bray, Philadelphia.
118 Orbital Diseases Secondary to Sinusitis. W. Reber, Philadelphia.
119 Case of Sympathetic Ophthalmia. N. M. Black, Milwaukee.
120 Fatal Case of Streptococcic Bacteriemia with Panophthalmitis. H. F. Hansell, Philadelphia.
121 Optic Neuritis Following Measles. J. M. Griscom, Philadelphia.
122 Case of Double Perforation of Globe by Iron Sliver. B. Chance, Philadelphia.
123 Case of Bitemporal Hemianopsia with Acromegaly and Other Symptoms Apparently Due to Disease in Pituitary Region. S. D. Risley, Philadelphia.
124 Transitory Decrease in Static Refraction of Eye in Diabetes. W. Zentmayer, Philadelphia.

Laryngoscope, St. Louis

January, XXII, No. 1, pp. 1-80

125 Otosclerosis and Allied Conditions. A. A. Gray, Glasgow.
126 Applied Anatomy of Eustachian Tube. J. A. Bacher, San Jose, Cal.
127 Polyp of Pharyngeal Mouth of Eustachian Tube. C. M. Brown, Buffalo.
128 Transillumination of Mastoid. H. P. Mosher, Boston.
129 Treatment of Cicatricial Stenosis of Larynx. E. Mayer, New York.
130 Treatment of Foreign Bodies in Esophagus. E. F. Ingals, Chicago.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London

January 27, I, No. 2665, pp. 169-224

1 *Resistance of Human Body to Disease. A. R. F. Exham.
2 Diagnosis of Spinal Cord Affections. D. Forsyth.
3 *Removal of Extramedullary Tumor of Spinal Cord; Recovery. J. M. Clarke.
4 *Regeneration of Nerves, with Regard to Surgical Treatment of Certain Paralyses. B. Kilvington.
5 Pneumococcal Meningitis. H. Drummond.
6 Transient Hemiplegia Following Parturition. H. Gillies.
7 Two Cases of Tetanus Treated Successfully by Subdural Injections of Magnesium Sulphate. O. Smithson.
8 Supposed Case of Heat-Stroke; Remarkable Recovery. A. S. St. John.
9 Acute Anterior Poliocencephalomyelitis in South Staffordshire. L. S. Tomkys.
10 Case of Poisoning by Oil of Mirbane (Nitro-Benzol). C. W. Hogarth.
11 *Vaccine Treatment of Hydrocele. S. Mallannah.

1. **Resistance of Human Body to Disease.**—The tenor of Exham's remarks is well summarized in the following paragraph: I think we must all realize that medicine is still far from being an exact science and that our ignorance is greater than our knowledge. But, if we also realized that the body is endowed with large powers of resistance to disease and that the problem of treatment is how to evoke those powers and help their utilization to the best advantage, and if we realized that resistance varies in the individual, then we would recognize that there is a certain unity in medicine, that it is the treatment of disease and not of diseases; we would recognize that we are not the masters but the servants of Nature, and we would sit humbly at her feet patiently investigating the secrets of that most marvelous collection of forces, the living human body, trying to help her, not endeavoring to take the case out of her hands. And a recognition of the unity of medicine would promote a spirit of unity among ourselves; we should hear less of systems of treatment; we should be spared those unedifying controversies in regard to special methods, of which we have had several instances lately, and which I confess are to me painful, for we would recognize that the goal we are all seeking to attain can be reached by several routes, and that no one of us has a monopoly of wisdom.

3. **Removal of Extramedullary Tumor of Spinal Cord.**—In the case cited by Clarke there was a lesion at the level of the lower part of the cervical region of the cord with affection of the pyramidal tracts below this level. The first clue to the extramedullary seat of the lesion was the discovery of the partial loss of sensation on the post-axial side of the left upper extremity, showing that the left eighth cervical and first dorsal posterior roots were definitely involved. This was supported by the distribution of muscles affected with wasting and altered electrical reactions, which coincided with the motor supply of the corresponding anterior roots. The pain was more widely diffused, but in its chief intensity corresponded fairly to the same roots. Further confirmation of an extramedullary lesion at this level was afforded by the order of onset of the cord symptoms; that is, (1) pain, (2) paresthesiæ, (3) paralysis, (4) wasting of muscles, first at the level of the lesion, and then, as pressure began to be exerted on the cord itself, the appearance of spasm, increased reflexes, and paralysis in the legs, with finally, much later in the case, some sensory loss over the trunk and legs, and affection of sphincters, as the cord gradually became more severely compressed. The case further illustrates the fact that if it is not destroyed, or there is no pressure-myelitis, the cord is capable of recovering from an enormous amount of pressure when this is removed. The order of return of reflexes is of interest. Two weeks after operation, sensory disturbance of legs and abdomen disappeared. Four weeks after operation, right abdominal reflexes returned; ankle clonus disappeared; left plantar reflex became "mixed" in character. Six weeks after operation, power over bladder recovered; knee-jerks still exaggerated. Eleven weeks after operation, double flexor plantar reflex; abdominal reflexes returned on both sides.

4. **Regeneration of Nerves.**—From the point of view of regeneration, Kilvington says an unremedied nerve division produces more serious changes in the central end (with the nerve cell) than in the distal end (with the muscle fiber and motor end organ). The appearance in the nerve trunk is the reverse of this. Beyond the bulb at the divided face of the nerve there is little visible change in the central stump. The distal divided trunk is always thinner than normal, more or less adherent to tissues, flabby to the touch, and reddish in color. The microscope shows marked alterations (Wallerian degeneration) in the distal nerve and none in the central. From these facts it is legitimate to conclude that the motor nerve cell is more damaged by ununited division of the nerve trunk than the isolated neuromuscular apparatus. In other words, when secondary suture is delayed too long and regeneration is not effected, it is not due to degeneration of the muscle or to loss of chemotactic attraction in the peripheral stump for the sprouting nerve fibers from the central nerve. The condition found after the nonunion of a cut nerve trunk is very variable. These varying conditions render any definite statement as to time limit to secondary suture difficult, if not impossible. Kilvington has had successful cases of secondary nerve suture in the human subject after many (six) years of nonunion. When all factors have been taken into consideration and it is concluded that restoration of function after secondary nerve suture is unlikely, there is still another surgical procedure open. This is the suture of recently divided central nerve fibers to the distal trunk of the degenerated nerve; that is, by nerve anastomosis to an adjacent healthy nerve.

11. **Vaccine Treatment of Hydrocele.**—When investigating the contents of 40 hydroceles for the presence of germs, Mallannah found the contents sterile, as a rule, but on one occasion met with an organism which on cultivation proved to be the *Bacillus pyocyaneus*. A vaccine (sterile) containing 25 million of *B. pyocyaneus* was then prepared and injected into the tunica vaginalis (after this had been tapped and evacuated) of the patient in whom the organism in question had been isolated. The injection produced a severe inflammation which lasted seven days and during this time the scrotum refilled, and its circumference became 2 inches larger than before tapping, while the patient's temperature varied between 101 and 103 F. On cessation of the inflammation the circumference of the scrotum returned to 20 inches. Matters remained in this condition for nearly a month, and for this period it appeared as if the severe inflammation had produced no beneficial effects whatever. Then, however, the swelling gradually decreased, and in two months' time the circumference of the scrotum was reduced to 5 inches and the hydrocele completely cured. This was a year ago, and the man still remains free from his former complaint, although it had previously existed for ten years, and his hydrocele had been tapped more than a dozen times. Encouraged by the success of this experiment, Mallannah then introduced vaccine containing 5 to 10 million of *B. pyogenes aureus* into a dozen cases; in some cases the vaccine was introduced after tapping, and in others without tapping. Generally the results obtained were usually identical with those recorded in connection with the case described.

Journal of Tropical Medicine and Hygiene, London

January 15, XV, No. 2, pp. 17-32

12 Weights of Organs. R. H. Castor.
13 Amebic Dysentery. A. Duncan.

Journal of Obstetrics and Gynecology of British Empire, London

December, XX, No. 6, pp. 269-324

14 *Primary Carcinoma of Female Urethra. B. Whitehouse.
15 *Clinical Aspects of Extrauterine Pregnancy. S. M. Mackenzie.
16 Life-History of Ovary. J. S. Young.
17 Case of Gangrene of Vagina. M. Lindsey.
18 Ovarian Pregnancy, Probably Bilateral. E. Holland.
19 Chorion-Epithelioma of Fallopian Tube. M. H. Phillips.
20 Primary Carcinoma of Female Urethra. J. S. Fairbairn.
21 Anglo-Chorioma of Placenta. R. D. Maxwell.

14. **Primary Carcinoma of Female Urethra.**—Forty-three cases of this kind are now on record including the one reported by Whitehouse.

15. **Extrauterine Pregnancy.**—One hundred and fifty-five cases were analyzed by Mackenzie. In 123 the diagnosis was confirmed by operation or in post-mortem examination. The remaining thirty-two presented the following symptoms:

There was a history of amenorrhea followed by a discharge of blood from the vagina, accompanied by pain in the lower part of the abdomen. A lump could be felt in juxtaposition to the uterus and this lump diminished and got harder with rest. Of these cases twenty-four were cases of hematocelé, thirty-seven were tubal mole, eight were tubal abortion, forty-eight were ruptured ectopic gestation, two were unruptured tubal gestation, one was abdominal pregnancy, one was lithopedion and one was interstitial pregnancy. The total number of hematoceles is therefore fifty-six. Of the cases which were found to be ruptured, forty ruptured in the peritoneal cavity and eight in the broad ligament. The cases were spread out over almost all the child-bearing period, the youngest being nineteen and the oldest forty-four. It is found that a woman of twenty-eight is specially liable to this condition, nearly 16 per cent. of the cases occurring in patients of that age. The greatest liability attached to one pregnancy, and extrauterine gestation is more likely to occur in a mother of a small family, since in 80 per cent. there was a history of three or less previous pregnancies. Forty-two per cent. occurred within two years of a previous pregnancy. Only 16 per cent. had had any previous pelvic trouble.

Australasian Medical Gazette, Sydney

December 20, XXX, No. 12, pp. 711-774

22 Wassermann Reaction Results in Victorian Eye and Ear Hospital for a Year. J. W. Barrett.
23 Unilateral Twin Tubal Pregnancy. H. C. T. Young.
24 Contribution to History of Disease in Australia. J. B Cleland.
25 Management and Treatment of Early Insanity. M. H. Downey.
26 Technic of Tuberculin Administration at Kalyra Sanatorium. C. Reissman.
27 Meckel's Diverticulum as Cause of Acute Intra-Abdominal Conditions. C. E. Todd.

January 6, XXXI, No. 1, pp. 1-24

28 Diseases of Children. A. J. Wood.
29 Different Standards of Health Maintained by Sexes in Queensland. E. S. Jackson.
30 Symptoms and Diagnosis of Ectopic Pregnancy. J. A. G. Hamilton.
31 Influenza and Cerebrospinal Meningitis. J. H. L. Cumpston.

Annals of Tropical Medicine and Parasitology, Liverpool

December 30, V, No. 3, pp. 347-500

32 Table of Statistical Error. Sir R. Ross and W. Stott.
33 Some Blood Parasites in Reptiles. H. Seidelin.
34 Experiments on Larvicides. Sir R. Ross and E. S. Edie.
35 *Effects Produced on Excretion of Urinary Pigments by Salts of Quinin. W. M. Graham.
36 *Passage of Hemoglobin Through Kidneys. W. Yorke.
37 *Pseudo-Relapses in Cases of Malarial Fever During Continuous Quinin Treatment. Sir R. Ross and D. Thomson.
38 Trypanosomes Found in Two Horses Naturally Infected in Gambia. W. Yorke and B. Blacklock.
39 Examination of City of Georgetown, British Guinea, for Breeding Places of Mosquitos. K. S. Wise.
40 Case of Human Trypanosomiasis in Nyasaland with Note on Pathogenic Agent. H. S. Stannus and W. Yorke.
41 *Second Series of Experiments Dealing with Transmission of Goiter from Man to Animals. R. McCarrison.
42 New Blood-Counting Pipette for Estimating Numbers of Leukocytes and Blood Parasites Per Cubic Millimeter. D. Thomson.
43 Some Researches on Life-Cycle of Spirochetes. H. B. Fantham.
44 Desmogonius Desmogonius: New Species and Genus of Monostome Flukes. J. W. W. Stephens.

35. **Effects of Salts of Quinin on Excretion of Urinary Pigments.**—Graham found that a dose of 15 grains of quinin hydrochlorid causes an early increase in the amount of water excreted in the urine. This increase is followed within twenty-four hours by a marked decrease, which is accompanied by an increase in the excreted pigments. These pigments consist largely of urobilin (chemical and spectroscopic proofs). There is an approximate return to the normal elimination of water and pigment, the phase being almost completed in one week.

36. **Passage of Hemoglobin Through Kidneys.**—It is difficult to determine the exact portion of the renal tubule which is responsible for the excretion of hemoglobin. Yorke believes that it is the epithelium of the convoluted tubules and possibly also that of the tubes of Henle, as in sections of kidneys removed within a few hours of the intravenous injection of hemoglobin the casts are found to be limited to the cortex and are not seen in the large collecting tubes of Bellini. Later, however, the plugs are found in the large collecting tubules, but in these cases they have probably simply descended from higher portions of the tubules. His observations are more in harmony with the view that hemoglobin is secreted by the renal epithelium than that it is filtered through the glomeruli, and that the amount of hemoglobin eliminated into the urine is dependent on the activity of the epithelium lining the renal tubules.

37. **Pseudo-Relapses in Malaria During Continuous Quinin Treatment.**—During the past two years the authors have been studying the effects of quinin on malaria, employing enumerative methods by which they constantly knew the number of parasites present in the blood per c.mm. Seventy-five cases studied in this way all showed the remarkable destructive power of quinin toward the asexual malarial parasites. In all cases in which quinin was given in doses of 10 grains, thrice daily, it was almost impossible to find asexual parasites in the blood after three days of the treatment, no matter how numerous the parasites were before the treatment was commenced. In no case did they ever discover a reappearance of these parasites while this dosage was continued. It would appear to them that, so far, no drug has been found with so great a curative power in any disease, as that of quinin in malaria. They call attention, however, to apparent relapses occurring during quinin treatment. In five, or 6.7 per cent., of their cases, a sudden isolated rise of temperature occurred during the quinin treatment, accompanied sometimes with a feeling of cold and slight shivering. No asexual parasites could be detected on prolonged search by thick film during these attacks of fever. On one occasion the blood was examined by fourteen persons for over half an hour, yet no parasites either sexual or asexual could be found. All these apparent relapses were, therefore, non-parasitic relapses.

They investigated the hospital records of one hundred cases of various diseases, not malarial, and found that similar more or less inexplicable isolated rises of temperature occurred in 17 per cent. of them. The diseases in which these isolated temperature rises occurred most frequently were cases of latent phthisis, cases of valvular heart disease, Bright's disease, chorea, rheumatism and bronchitis, and to a less frequent extent in various other conditions, and in one case of spastic paraplegia. These isolated and more or less inexplicable rises of temperature, therefore, occur in other diseases during treatment as well as in malaria, and it seems possible that they may have no real connection with the original disease. In some cases the temperature could be explained by a sudden and transitory inflammation of the tonsils. One patient had a slight tonsillitis during his pseudo-relapse. Again these rises of temperature in two of the cases did not occur on the proper day, so that they would appear not to be malarial.

41. **Transmission of Goiter from Man to Animals.**—A spore-bearing bacillus was isolated by McCarrison in pure cultures from the feces of a goitrous horse and was constantly present in the cultures from the feces of goitrous individuals. It is a rod-shaped bacillus, varying from 2 to 4 microns in size, which does not retain the stain by Gram's method, but stains well with carbol-fuchsin, Leishman's and other stains. The bacilli vary in size and thickness and some of them contain a lighter unstained area, situated usually at the center, but sometimes towards the periphery of the organism. The growth on Musgrave's agar shows, in addition to the bacilli, numerous round unstained bodies, which are seen to be spores when special staining methods are employed. In some of the bacilli spore-formation is also seen. The organism is very actively motile in young cultures. Plate cultures on agar and Musgrave's medium appear as small, round and opaque white colonies. The deeper colonies are irregular, with crenated margins and are bluish-white in color. The growth is more profuse on alkaline agar than on Musgrave's medium. On agar slopes a profuse opaque growth, white lead in color when viewed from the surface and faintly brown in color with transmitted light, is seen after twenty-four hours. The organism ferments glucose, levulose, mannose and galactose, but not dextrose, mannite, lactose or maltose. It produces no curdling or acid in litmus milk and grows profusely in broth, forming a white scum on the surface. It does not liquefy gelatin in stab cultures; in this medium it forms a button-like growth into the medium, with both superficial and deep gas production. On potato there is a profuse brownish growth.

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The organism is not killed by 0.5 per cent. phenol for twenty-four hours in an incubator, nor by 60 C. for half an hour. It is not destroyed by boiling at 94 C. for five minutes. Half to 1 c.c. of a living culture injected into guinea-pigs produced no immediate ill effects. Larger quantities of the living culture injected into dogs, kids and goats gave a similar result. A young dog was given nine Musgrave's agar tubes of a forty-eight-hour culture of this organism. The animal died on the ninth day. The thyroid lobes were removed, with two enlarged lymph-nodes in their vicinity. Two agar tubes were inoculated with the blood-stained fluid which escaped from the cut surface of the lymph-nodes. After twenty-four hours' incubation several colonies of the spore-bearing organism above described were present in one of the tubes. The other tube remained sterile.

Annales de Médecine et Chirurgie Infantiles, Paris

January, XVI, No. 1, pp. 1-32

45 *Aphthæ in Children. (Les aphtes chez l'enfant.) E. Gaujoux.
46 Acute Rheumatism Affecting the Brain. (Rhumatisme cérébral à forme de confusion mentale aigue chez un enfant de 7 ans.) Nobécourt and H. Darré.
47 Examination for Tubercle Bacilli in Tuberculosis in Children. (Diagnostic de la tuberculose chez l'enfant par la recherche du bacille de Koch.) P. Nobécourt. Concluded.
48 *Bilateral Spastic Paralysis in Children. (La maladie de Little. Étiologie, pathogénie et anatomie pathologique.) V. Hutinel and L. Babonneix.
49 Ultimate Outcome of Congenital Dislocation of the Hip-Joint Given Bloodless Treatment. (Du pronostic éloigné des luxations congénitales de la hanche opérées par la méthode non sanglante.) P. Redard.

January 15, No. 2, pp. 33-64

50 *Protracted Cerebrospinal Meningitis and Recovery After Decompressive Trephining. (Méningite cérébro-spinale prolongée à forme cachectisante.) R. Debré.

43. Aphthæ in Children.—Gaujoux refers to the article by Lévy, mentioned in THE JOURNAL, Dec. 2, 1911, p. 1873. He then goes on to show the difference betwen aphthous stomatitis, which occurs in young children, is usually due to some error in diet and is readily cured by using some mild antiseptic mouth wash, and the true aphthous fever which is contracted from foot- and mouth-disease in cattle. He then refers to Ruault's report of several cases of aphthous fever occuring in one house, and which ceased as soon as there was a change in the milk-supply. Gaujoux records also, from his own practice, three cases of aphthous fever which occurred in one household, which could be directly traced to milk. The children in the family who had a different diet were not affected. In the treatment of aphthous fever three things are necessary: (1) to boil the milk; the virus is easily destroyed; (2) to give sodium salicylate, and (3) diphtheria antitoxin, as some have recommended.

48. Bilateral Spastic Paralysis.—Hutinel and Babonneix sum up their studies of Little's disease as follows: In regard to its etiology, it may be due to some obstetrical traumatism during premature or difficult labor or to some toxic infection, as syphilis. Both elements may be present. The direct cause is probably cerebromeningeal hemorrhage, the results of asphyxiation, trauma or toxic infection. These lesions are always cerebral and do not differ from those found in other varieties of cerebral diplegia; they are found more often in the upper part of the two regions of Rolando; those of double hemiplegia are found in the central portion, and the lesion in pseudobulbar paralysis in the inferior portion of this same area. As a result of the cerebral lesions, there is sclerosis of the pyramidal tracts (a secondary degeneration) or agenesia, that is, defective development or absence of parts. The mechanism of the contractures is still obscure. The mental defects are due to lesions in the frontal lobes or diffuse cerebral lesions, the convulsions to this latter cause, the athetotic movements to irritation of the pyramidal bundle.

50. Decompressive Trephining in Protracted Cerebrospinal Meningitis.—Debré's patient was a boy of 8 who developed acute cerebrospinal meningitis and it passed into a practically chronic phase, notwithstanding serotherapy according to approved methods. This protracted form is distinguished by dulness, sphincter disturbances, diffuse amyotrophy, paresis with rigidity and cachexia, but normal temperature. In his case acute, intensely severe paroxysms developed at variable intervals, the child's attitude and opisthotonus resembling severe tetanus, and the headache being severe, accompanied by uncontrollable vomiting; during the intervals the symptoms were comparatively slight. After six months the eyesight began to fail and decompressive trephining was intended but postponed for several weeks. When the operation was finally done, the child, who had seemed almost moribund, began to recover, the symptoms subsided and a complete cure followed about eleven months after the first symptoms of meningitis. The trephining had come too late to save the eyesight; the atrophy of the optic nerve was already irremediable. The case teaches the importance of watching for signs of intracranial pressure, especially for edema of the papilla, and trephining at once as soon as the diagnosis is certain. In most cases of blindness from meningitis, the optic neuritis is consecutive to optic meningitis, the edematous condition of the papilla and inflammation coming on early in the acute phase. In the present case there were no symptoms on the part of the eye until the disease had lasted for six months.

Archives des Maladies de l'App. Digestif, Paris

December, V, No. 12, pp. 649-712

51 *Diagnostic Importance of Reduced Excretion of Creatinin in the Urine. (La valeur séméiologique de la créatinine et sa diminution dans les urines de certains malades asthéniques.) J. C. Roux and Taillander.
52 Fatal Primary Arteriomesenteric Occlusion of the Duodenum in Young Man. (Cas d'occlusion aigue gastro-duodénale primitive par compression artério-mésentérique.) Leriche and R. Perducet.
53 *Diabetes Developing Suddenly During Septicemia. (Diabète suraigu au cours d'une septicémie; coma acétonurique; mort.) Courtellemont.
54 *Influence of Sodium Salts on Bladder and Stomach Secretion. (Influence de l'ingestion du bicarbonate et du citrate de soude sur l'élimination du chlorure de sodium par l'urine et sur la sécrétion chlorhydrique au cours des gastropathies.) A. Mathieu. Commenced in No. 2.

51. Diagnostic Importance of Creatinin in Urine.—Roux and Taillander summarize a dozen cases from their experience in which digestive disturbances and diarrhea or constipation were accompanied by symptoms of neurasthenia and considerable muscular weakness, and the proportion of creatinin in the urine was much below the normal percentage. Ingestion of meat invariably aggravated the disturbances and brought on headache and malaise. The patients were all women. A similar reduction in the output of creatinin was also noted in other patients with inanition, in melancholia with prostration, in paralysis and in a number of elderly persons examined. Some experiments on rabbits are also reported which seem to show that it is possible to modify by thyroid extract, epinephrin, etc., the nutritional processes in such a way as to exert a decided influence on the elimination of creatinin.

53. Diabetes in Course of Septicemia.—A robust man of 41, healthy except for a history of mild syphilis in youth, developed acute indigestion after eating heartily of game, followed by a stage of nephritis with anuria and uremia and this by a stage of subacute diabetes with polyuria and polydipsia as well as glycosuria, terminating in fatal coma the fifteenth day after the first symptoms of indigestion. Courtellemont explains the case as a septicemia from alimentary intoxication inducing meningo-encephalitis localized in the regions which regulate the output of sugar in the urine.

54. See abstract 41 in THE JOURNAL, Jan. 13, 1912, p. 149.

Journal de Médecine de Bordeaux

January 7, XLII, No. 1, pp. 1-16

55 *Preservation of Cadavers. (Conservation des cadavres à l'Institut anatomique.) Aubaret.

January 14, No. 2, pp. 17-32

56 *The Binet Tests for Mental Retardation. (Les tests de Binet dans le tout jeune âge.) R. Cruchet.

55. Preservation of Cadavers.—Aubaret says that the technic described prevents discoloration of the tissues and renders them much less fragile, in comparison with the effects of the usual technic. To the usual solution of formaldehyd in wood alcohol and water he adds 40 or 50 gm. of saltpeter to the liter, with 10 or 20 gm. of sea salt. Cadavers injected with this fluid and kept in vats for over a year still retain their natural coloring and suppleness to a remarkable extent. The vats are kept filled with water containing the formaldehyd and alcohol solution to a specific gravity of 1.004 or 1.006, no

more. The vats in use can hold up to eighteen cadavers; the glass cover fits airtight when water is poured into the groove around the edge.

56. **The Binet Tests for Mental Retardation.**—This system of tests was discussed editorially in THE JOURNAL, Dec. 16, 1911, p. 2001. Cruchet has been studying the findings as the tests were applied to a large number of children under six years old. He comments on the difference between the sexes in the replies to the test questions and adds that children at this age ask questions incessantly but do not like to answer them, and their replies are no index of their intelligence. The true test is to listen to them and watch their actions without appearing to do so. The spirit of the tests, rather than the letter, should be followed, and allowance should be made also for the difference between city and country children. Cruchet thinks that a larger number of questions should be used than Binet suggests, to give more play to the child's mentality. He mentions parenthetically that the stock question, "How old are you?" may prove misleading, as one mother said she was careful not to let her child know his age as it might prove embarrassing when she was traveling with him as "under 6."

Lyon Médical, Lyons

January 7, CXVIII, No. 1, pp. 1-48

57 *Experimental Research on Involution of the Thymus Under Exposure to the Roentgen Rays. (Sur l'involution du thymus produite par les rayons X.) C. Regaud and R. Cremieu.

January 14, No. 2, pp. 49-116

58 *Benign Extrasystolic Arrhythmia. (Orage extra-systolique d'origine émotive; rythme couplé transitoire bénin régressif.) L. Gallavardin.

57. **Involution of the Thymus Under Roentgen Rays.**—Regaud and Cremieu experimented on forty young cats and found that the thymus definitely disappeared after exposure to a strong dose of the Roentgen rays, at the expense of a mild transient dermatitis. This probably might have been avoided by fractioning the dose or using a thicker aluminum filter.

58. **Benign Arhythmia.**—In the first of the two cases reported in detail the patient was a man of 27 and the extra-systolic arhythmia commotion developed after sudden, intense emotional stress; the irregularity persisted for over a year, growing gradually less. He had a history of mild scarlet fever and measles in childhood and acute transient nephritis at 16. Otherwise his health has been at all times good to date. The second patient applied for relief from "palpitation of the heart." The extra-systolic arhythmia developed in three phases: six months of attacks of continuous couple rhythm for a few minutes, recurring from fifteen to twenty times a day; then three months of the intermittent rhythm, and finally a phase of isolated extra-systoles, the intervals between the attacks growing constantly longer during the eighteen months to date. The young man was and is apparently healthy except for slight dyspeptic disturbances. Gallavardin reviews some similar cases of benign arhythmia on record; there is generally a history of anemia, nervousness or dyspepsia. The overexcitability of the myocardium inducing this transient couple rhythm generally subsides and conditions right themselves; he proposes the term "regressive" for this special form of arhythmia. It is generally arrested temporarily by an injection of atropin.

Presse Médicale, Paris

January 13, XX, No. 4, pp. 33-48

59 *Diabetes from Atrophy and Sclerosis of the Pancreas. (Diabète maigre par sclérose atrophique du pancréas.) G. Ralliet and M. L.-Levastine.

60 Deformity of the Appendix. (L'appendice iléo-cæcal ectopique.) G. Lerda.

61 Symptomatology of Disease of the Gasserian Ganglion. (Le syndrome gassérien.) F. Lévy.

January 17, No. 5, pp. 49-56

62 Stability of Disease Types Through the Ages. (Stabilité et conditions de variation des espèces morbides.) Chaufard.

59. **Diabetes with Sclerosis of the Pancreas.**—The pancreas was found almost totally destroyed after the patient, a woman of 58, had succumbed to the rapid progress of pulmonary phthisis, accompanied by much emaciation, with 186 gm. of glucose in the twenty-four hour urine and other signs of typical diabetes. The sclerous atrophy of the pancreas involved all but 3 or 4 gm. of the gland, which weighed in all 19 gm., while the thyroid, hypophysis and adrenals showed signs of hyperfunctioning.

Semaine Médicale, Paris

January 17, XXXII, No. 3, pp. 25-36

63 Drainage After Laparotomies. (La valeur pratique du drainage abdominal.) F. Lejars.

Archiv für Kinderheilkunde, Stuttgart

LVII, Nos. 1-3, pp. 1-240. Last indexed Nov. 25, 1911, p. 1803

64 *Thymic Death and Thymic Asthma in Children. (Mors thymica et Asthma thymicum bei Kindern.) D. Ssokolow.

65 Two Recurrences of Measles. (Ein doppeltes Masernrecidiv.) Feibelmann.

66 *Bedbugs as Carriers of Disease. (Zur Rolle der Insekten als Krankheitsüberträger.) E. Sergeois.

67 Results of Measures for Infant Welfare. (Statistik der Erfolge von Fürsorgemassnahmen.) G. Tugendreich.

68 *Prevention of Flat-Foot in Children. (Verhütung des Plattfusses im kindlichen Alter.) G. Muskat.

69 Infantilism. (Zur Begriffsbestimmung des Infantilismus.) B. Wolff.

70 *Diphtheria Bacilli Carriers and Persistence of the Bacilli. (Zur Epidemiologie der Diphtherie.) P. Sommerfeld.

71 Raspberry Tongue in Children. (Ueber die Himbeerzunge der Kinder.) G. E. Wladimiroff.

64. **Thymic Death and Thymic Asthma in Children.**—After analyzing 101 cases of deaths from an enlarged thymus, recorded in the literature, Ssokolow warns against attributing to the thymus those cases of sudden death in which some other cause of death is present. Experiments have shown that it takes a much greater weight than that of an enlarged thymus to compress the larynx so that breathing is stopped. Then too, particularly in children, the elasticity of the chest walls and of the surrounding structures helps to prevent compression from an enlarged thymus. Just as in cases of enlarged lymph-nodes, spleen or thyroid, so is it with the enlarged thymus, there is an internal secretion which slowly increases, thus flooding the organism, or some other injurious product is found in the gland, which gives rise to an autointoxication. Accordingly the sudden deaths when there is an enlarged thymus are due, not to the pressure of the gland, but to a paralysis of the heart or affection of the respiratory center due to the excess of this internal secretion. Then follows an analysis of three tables of cases of thymic asthma (respectively forty-eight, thirty-nine and twenty-three cases in which operative treatment was attempted, tracheotomy or intubation); here again it is necessary to distinguish between dyspnea and asthma, and to eliminate any other cause for the obstruction. Radiographs and dulness on percussion cannot be depended on for diagnosis as enlarged mediastinal or bronchial lymph-nodes will give the same findings, especially if tuberculous, and it is often difficult to differentiate thymic asthma from capillary bronchitis. It should be noted that in König's case, following an operation on the thymus, rachitis developed; this has also been observed in experiments on animals, after the removal of the thymus. In Rehn's case, atrophy dependent on an enteritis followed. Although often difficult to differentiate, cases of pure thymic asthma do occur; it is characterized chiefly by dyspnea during expiration. Ssokolow has done much experimental work on the thymus, which he reviews—his impression being that the thymus is of essential importance for the growing child, its internal secretion being necessary for normal growth, but that its functions can be partly assumed by other organs at need.

66. **Rôle of Insects as Carriers of Disease.**—This is a study of the bedbug as a carrier of disease. Sergeois gives the anatomy and life history of the bedbug, and discusses the experimental work which has been done, especially in regard to relapsing fever, and the possibility of its being carried by this insect. In conclusion he states that it is possible for the bedbug to be an intermediary for disease germs. Ordinarily it plays the part merely of a carrier; seldom is it the host. In no disease is it of specific epidemologic importance, yet undoubtedly through bedbugs such diseases as relapsing fever and kala-azar remain endemic in certain places. It is known that infectious organisms may remain alive a long time in the bodies of bedbugs. In order for the infection to be transmitted, the microorganism must escape from the crushed bedbug and come in contact with some abrasion in

the skin, into which it must be impelled with some force; these conditions are liable to occur in scratching a bedbug bite. Consequently the bedbug is a dangerous insect, and its extermination is a hygienic necessity.

68. **Prevention of Flat-Foot in Children.**—According to the army statistics in Germany, twenty-five per thousand of the young men at the age for compulsory military service have to be rejected on account of flat-foot, a total of 10,000 conscripts a year. Flat-foot is congenital in 4.3 per cent. and acquired in 95.7 per cent. In previous works on prophylaxis of flat-foot, Muskat emphasized the need of caring for the feet, and exercising the toes and ankles, the influence of walking and standing properly, placing the feet parallel, not turning the toes out or in; proper shoes and stockings, not too narrow and pointed. The shoe and stocking should be made to fit each foot separately to conform to the natural shape of the foot. A physician should be consulted at once when any trouble begins in the foot. Acquired flat-foot is of traumatic origin in about 4.9 per cent.; of paralytic in 3.1 per cent.; of rachitic in 3.1 per cent.; and due to improper use of the foot, a static disturbance, in 88.9 per cent. In the traumatic, paralytic and rachitic cases, proper measures should be applied, such as bandaging, to prevent the development of flat-foot. Prophylaxis of flat-foot should not be by wearing insoles but by teaching children to use their feet properly in walking, in standing and in sports and exercising.

70. **Diphtheria Bacilli Carriers and the Persistence of the Bacilli.**—The diphtheria bacillus is frequently found in the throats of healthy persons, but they have always been in contact with diphtheria patients. Sommerfeld gives a table of nineteen cases in which the child was well, the throat findings negative, but cultures taken from the mother's throat the day the child left the hospital were positive. The bacilli from the throats of the diphtheria carriers are as virulent as those in the throats of the sick. Diphtheria bacilli may linger in the throat for months after the patient is well. These bacilli carriers and convalescents are particularly dangerous for spreading the bacilli. Patients should remain in the hospital until their throats are free from diphtheria bacilli, but they may, on returning home, become infected again from bacilli carriers in the family. The isolation of diphtheria bacilli carriers is of great importance in eradicating the bacilli. Sommerfeld suggests isolating the carriers in convalescent homes; he deplores the lack to date of any effectual means for destroying the bacilli in the mucosa. He examined 368 children in a general hospital and found diphtheria bacilli in the throat or nose in 8; that is, in 2.1 per cent. One of the children had had diphtheria four years before, another six years before, and the sister of a third had had diphtheria eighteen months before. No cases of diphtheria had resulted from the presence of these carriers in the wards.

Archiv für klinische Chirurgie, Berlin

XCVI, No. 4, pp. 825-1089. Last indexed February 3, p. 379

72 *Biologic Sugar Solution Treatment of Peritonitis. (Die Zuckerbehandlung der Bauchfellentzündung.) F. Kuhn. Commenced in No. 3.
73 Importance of Blood-Count Before Operations. (Wert der Blutuntersuchungen vor Operationen.) G. Lerda and G. G. Rossi.
74 General Anesthesia from Intravascular Injection of Local Anesthetics. (Totalanästhesie druch Injection von Localanaesthetica ins Blut.) C. Ritter.
75 Peritonitis. (Zur Behandlung der acuten, freien Peritonitis, mit bes. berücksichtigung auf die Frage der primären Naht.) F. Bauer.
76 Tumors of the Spinal Cord. (Operative Entfernung intramedullärer Rückenmarkstumoren.) W. Röpke.
77 Primary Tumors of the Greater Omentum. (Zur Casuistik der primären Geschwülste des grossen Netzes.) F. Heinsius.
78 Small Intestine for Plastic Operations on Urinary Passages. (Anwendung von Dünndarmteilen bei gewissen Operationen der Harnwege.) J. Berg.
79 Intraparietal Inguinal Hernia. (Einige Fälle von interparietalen Leistenbrüchen.) F. Ehler.
80 Hemangiomas of the Parotid Gland. T. Usui.
81 Perithelioma of the Brain. (Fall von Peritheliom des Gehirns.) T. Coste and F. H. Levy.
82 Mobilization of Rigid Upper Aperture of the Thorax by Paravertebral Resection of the First Rib to Relieve Pressure on Apex of Lung. (Die hintere, paravertebrale Decompressivresection der ersten Rippe zur Behandlung "Freund'scher Spitzentuberculosen".) C. Henschen.
83 Bone Plastic Operation on Lower Lip for Congenital Defect in Two Brothers. (Freie Knochenplastik in die Unterlippe bei congenitalem Facialisdefect.) A. Löwer.

72. **Sugar Solution in Biologic Treatment of Peritonitis.**—THE JOURNAL mentioned recently, page 379, Kuhn's arguments in favor of a concentrated solution of sugar as the best solution for washing out the peritoneal cavity in peritonitis and to leave in the peritoneal cavity. It is not irritating but has a complete biologic and physiologic action here. It helps drainage, prevents abscess formation, hinders the formation of alkaline, hemolytic and toxic products, and helps to preserve the endothelium and thus protects the entire organism. It is best to use a concentrated solution of grape sugar in physiologic solution, and to introduce the fluid into the peritoneal cavity through a tube speculum. The sugar solution is indicated in early cases of peritonitis, but it is of special value in the late cases, even after abscess formation. Sugar checks putrefaction of albumin, the hemolytic action of bacteria and production of bacterial toxins, while injected into the peritoneum it starts an outward flow of fluid, automatically flushing and draining the cavity. This auto-rinsing is the chief feature of the biologic effect, and it is effectually supplemented by the checking of coagulation from fibrin production. He rinses first with a 4 per cent. solution and then introduces and leaves a more concentrated solution, 10 or 20 per cent.

Beiträge zur klinischen Chirurgie, Tübingen

December, LXXVI, No. 3, pp. 545-891

84 Stab Wounds of the Thorax. (Behandlung der Stichverletzungen des Thorax. Auf Grond eines Materials von 257 Fällen, 1905-1909.) W. Lawrow.
85 *Traumatic Tetanus. (Vorbeugung und Behandlung des Wundstarrkrampfes.) M. Magula.
86 Frequency of Acute Appendicitis. (Zur Frage der Häufigkeit der akuten Appendicitis.) G. Petren.
87 Proliferation of Epithelium in Enlarged Prostate. (Ueber atypische Epithelwucherungen in der hypertrophischen Prostata.) A. Tietze.
88 *Acute Yellow Atrophy of the Liver, etc., and Anuria. (Ueber Icterus gravis und Anurie.) Steinthal.
89 *Operative Treatment of Non-Malignant Disease of the Stomach. (Die chirurgische Behandlung gutartiger Magenerkrankungen und ihre Folgezustände.) W. Burk.
90 Trichosoma as Cause of Tumor Growth in Rat Bladder and Kidney. (Trichodes crassicauda specifica, eine Causa directa in der Aetiologie der Tumoren.) S. Löwenstein.
91 Cystic Degeneration of Gall-Bladder and Primary Cancer of Cystic Duct. (Cystische Entartung der Gallenblase und primäres Adenocarcinom des Ductus cysticus. Zur Frage der Epithelveränderung.) C. Licini.
92 *Fatality During Nitrous Oxid and Oxygen General Anesthesia. (Ein Todesfall während der Lachgas-Sauerstoffnarkose.) J. Olow.

85. **Traumatic Tetanus.**—Magula reports the results of the use of antitetanus serum at the Obuchow hospital in St. Petersburg. In ten years, in the 20,913 patients under treatment, there have been thirty-three cases of tetanus; that is, 0.16 per cent. The mortality of the serum-treated patients was 71.4 per cent. Nineteen patients did not receive the serum, and of these fourteen died, a mortality of 73.7 per cent. Magula thinks that the positive results of antitetanus serum when used either prophylactically or therapeutically, are small. In the severe, acute cases, the serum has proved powerless. In the light cases, or the chronic cases with a long latent period, recovery takes place without the use of the serum. He found that the longer the latent period, the milder the case and the better the prognosis. All the patients who recovered had an incubation period of ten days or more. The wound was usually in the foot and hand. The majority of the patients were between 14 and 30 years old.

88. **Icterus Gravis and Anuria.**—Steinthal refers to the normal physiologic process by which the bilirubin passes with the bile into the intestine, is there broken up into urobilin and urobilinogen, and then the greater part of the urobilin goes back to the liver. When through some obstruction the bile is prevented from reaching the intestine, urobilin is found in the urine. Accordingly urobilinuria is an indication of relative insufficiency of the liver cells. There are cases of gall-stones with obstruction of the common bile duct and icterus gravis in which, following the operation, there is oliguria and a lethal anuria. He cites a case of his own, in which at necropsy there was found an acute nephritis with degeneration of the epithelium. He also refers to a case of Beck's in which there was acute parenchymatous nephritis, and a case of Simon's in which the necropsy showed a hemorrhagic nephritis with hemorrhagic glomerulitis.

89. **Operative Treatment of Non-Malignant Disease of the Stomach.**—Burk says that the complications of gastric ulcer, such as hemorrhage, perforation, pyloric stenosis, a hardening of the ulcer, deformity of the stomach or cachexia, indicate operative measures, but for simple ulcer they are not required. At the operation the neighboring organs, pancreas, duodenum, liver, gall-bladder and appendix, should all be examined. With an active gastric ulcer the lymph-nodes should be examined for carcinoma. Ulcer of the pylorus, not penetrating or callous, indicates post retrocolic gastro-enterostomy with a short loop, particularly if there is stenosis of the pylorus, or the ulcer may be excised and a gastroduodenostomy done. With this operation there is less danger of secondary stenosis from the scar. In pyloric ulcer with much perigastritis, a simple gastro-enterostomy is best; here, too, resection of the pylorus may be necessary. Hemorrhage from the stomach suggests danger of perforation or carcinoma, accordingly a radical operation is called for—excision of the ulcer with or without operation of the pylorus. With a hard gastric ulcer there is danger of carcinomatous degeneration, perforation into the abdominal cavity, hemorrhage, involvement of neighboring organs and deformity of the stomach. A hard ulcer of the body of the stomach requires a partial resection of the stomach. A hard ulcer of the pylorus demands a pyloric resection. When there is a hard ulcer of the body of the stomach, excision should be used only when the size and position of the ulcer are such that there will not be any serious resulting deformity of the stomach. This operation should be combined with a gastro-enterostomy from behind; 25 per cent. of the hard ulcers have shown beginning cancer. With ulcer of the duodenum, the shutting off of the pylorus is the best procedure. Gastro-enterostomy is indicated with pyloric stenosis, together with exclusion of the pylorus, if there is adjoining inflammation or a small pyloric ulcer. Hour-glass stomach requires gastroplasty; it may be combined with gastro-enterostomy, but, if there is stenosis and an active ulcer, resection is advisable. The radical operations and the shutting off of the pylorus give the best permanent results. With gastro-enterostomy, the ulcer returns in 20 per cent. of the cases. The mortality after operations for ulcer of the stomach and duodenum, in the ninety cases on which Burk's article is based, was with gastro-enterostomy, 3.3 per cent.; with the radical operation, 12.5 per cent.

92. **Death During Nitrous Oxid and Oxygen Anesthesia.**—Olow reports a case of death on the table under laughing gas and oxygen anesthesia. The cause of death is hard to explain. The operation was for a loose body in the knee joint. The patient was a man of 53, very stout, with emphysema and sclerosis of the coronaries, but otherwise apparently in good health. Three minutes after the beginning of the anesthesia, although not deeply under, the patient suddenly became cyanosed and stopped breathing. Artificial respiration was used and ether injected subcutaneously, but in half a minute the heart stopped beating. Necropsy showed syphilitic changes in the aorta, secondary hypertrophy of the heart, sclerosis of the coronary arteries and degeneration of the muscles. See THE JOURNAL, Feb. 10, page 395, for article on this method of anesthesia; it has been applied by Olow in fourteen cases during the past year, including the above fatality.

Berliner klinische Wochenschrift

January 15, XLIX, No. 3, pp. 97-144

93 The Phthisical Chest and the Predisposition to Tuberculosis. (Der Thorax phthisicus und die tuberkulöse Disposition.) R. Stiller.
94 Percussion and Auscultation. (Ueber Perkutieren und Auskultieren.) E. Aufrecht.
95 *Syphilitic Polyneuritis. (Polyneuritis luetica.) A. Plehn.
96 Salvarsan Administered by the Rectum. (Rectalmethode in der Salvarsantherapie.) S. L. Bagrow.
97 Radium Emanations in Therapeutics. (Ueber Heilerfolge mit Radiumemanationskuren.) J. v. Ranczur. (Versuche über die Wirkung der Radiumemanation auf das Blutgefässsystem.) A. Loewy.
98 Resection of Ribs. (Zur Technik der Rippenresektion.) C. Ritter.
99 Agar as a Vehicle for Drugs to Act on Intestines. (Ueber Agar als ein Vehikel in der Darmtherapeutik.) M. Einhorn (New York).
100 Comparative Tests for Albuminuria. (Ueber die Esbach'sche und Aufrecht'sche quantitative Eiweissbestimmungsmethode im Urine.) E. Pfeiffer.

95. **Syphilitic Polyneuritis.**—Plehn remarks that he knows of only six certain cases of syphilitic polyneuritis on record, and one of them was in his own practice six years ago. Since then he has encountered two other cases which he here reports in detail. The flaccid paralysis, paresthesias, loss of the tendon reflexes, atrophy and reduced galvanic excitability at least in the face, excluded poliomyelitis and the prompt improvement under specific treatment confirmed the diagnosis of a syphilitic affection. Facial paralysis developed on resumption of the specific treatment later, with lagophthalmos, but he regarded these as the equivalent of the Herxheimer reaction in the skin and continued the treatment under which the symptoms subsided completely. No specific treatment but mercury and potassium iodid was given in this case at any time. The patient was a woman of 36 with a history of two abortions, otherwise apparently healthy, although the Wassermann reaction was faintly positive; both husband and wife denied syphilis. The polyneuritis developed suddenly, the legs becoming too weak to sustain her and the arms weak likewise, with numbness and pricking in the limbs but no actual pain except in the region of the coccyx. The second patient was a robust man of 39, with no history of syphilis, who developed pains in the limbs and paralysis of the legs and fingers; the knee-jerk was hard to elicit, the other reflexes normal. As no improvement was observed in two weeks, potassium iodid was given and motor recovery followed, aided by an injection of salvarsan, although the patient is still rather weak and has some tremor. The pains in both cases were too mild to conform to the clinical picture of subacute poliomyelitis, which otherwise the affection might have suggested. Plehn's three cases belong to the pure motor type of polyneuritis which seems to be especially rare.

Deutsches Archiv für klinische Medizin, Leipsic

CV, Nos. 1-2, pp. 1-177. Last indexed February 10, p. 447

101 Innervation of the Intestine. (Darminnervation.) L. R. Müller.
102 Fever from Hemolytic Processes and Transfusion of Blood. (Studien über das Fieber durch Blutzerfall und Bluttransfusion.) H. Freund.
103 *Improved Method for Titration Determination of Small Amounts of Sugar. (Neues titrimetrisches Verfahren zur Bestimmung besonders von kleinen Zuckermengen.) Flatow.
104 *Hemolytic Processes from Soaps in the Blood. (Ueber Seifenhämolyse innerhalb der Blutbahn und ihre Verhütung im Organismus.) W. Meyerstein.
105 *Hematoporphyria. (Die Hämatoporphyrie.) H. Günther.
106 *Dependence of Albuminuria on Acidity of Urine. (Ueber die Abhängigkeit der Albuminurie vom Säuregrad des Urins und über den Einfluss der Alkalizufuhr auf Aciditat, Albuminurie, Diurese und Chloridausscheidung, sowie auf das Harnammoniak.) R. v. Hösslin.

103. **Titration Method for the Estimation of Small Amounts of Sugar.**—Flatow describes the method used by Moritz for twenty years in determining the sugar content of the blood. The advantages of this method are said to be in the small amount of blood necessary, 15 or 20 c.c. being sufficient for three or four tests, and that the end reaction is obtained quickly and remains. The apparatus necessary for this method is somewhat complicated. The principle of the method is decoloration with hydroxylamin after the fluid to be examined has been added to a boiling ammoniacal copper solution.

104. **Destruction of Red Corpuscles by Soaps in the Blood and Means to Prevent It.**—Meyerstein found through experimentation that sodium oleate, stearate and palmate, in certain concentrations, would dissolve the red corpuscles, both in the test tube and in the blood-stream, even in the presence of blood-serum. Consequently by intravenous injection of these substances it is possible to induce hemoglobinuria. The hemolytic action of soap and the production of hemoglobinuria after an intravenous injection, is arrested by the incorporation of cholesterin at the same time. Other lipoids, such as cephalin and the lipoids of the erythrocytes themselves, also give good protection. The neutral fats also act antagonistically to the soaps, so the relation of fats to soaps is of decided importance. The soaps can produce anemia if their quantity in the blood exceeds a certain amount.

105. **Hematoporphyria.**—This term has been coined to express a condition in which there is enormous production and elimination of hematoporphyrin in the urine and sensitive-

ness of the skin to light. Günther summarizes the fourteen acute cases that have been reported to date. The syndrome is further characterized by intestinal disturbances, vomiting, constipation and abdominal pain. Five of the patients died, four of whom had paralysis of the Landry type; the others recovered. Acute toxic hematoporphyrinuria is found in chronic intoxications with sulphonal, trional and veronal, but is not present in the acute cases of poisoning with these drugs. (Compare with Abstract 83 in THE JOURNAL, Jan. 20, 1912, p. 234.) There are nine cases of chronic hematoporphyrinuria on record; these were characterized by sensitiveness of the skin to light, inducing hydroa estivale and in one case there was also scleroderma. This chronic form is the congenital hematoporphyria. The hematoporphyrinuria and hydroa estivale began in early childhood; later (18 to 45 years) mutilations develop, especially on the nose, ears, cheeks, backs of the hands and fingers. The urine looks like port or burgundy wine.

106. **Albuminuria and Its Dependence on Acidity of the Urine.**—Hösslin draws the conclusion from his experiments that there is some relation between the acidity of the urine and albuminuria, for in cases of albuminuria and nephritis the addition of an alkali lessens the albumin or causes it to disappear entirely, but it will return if the urine becomes acid again. The same is true in regard to casts in the urine. Uric acid plays an important part; there seems to be no fixed relation between the uric acid and albumin. He considers this of importance in the treatment of albuminuria. In all cases of albuminuria the acidity should be estimated and an attempt made to lessen this through the use of alkalies. The best alkali for this purpose seems to be sodium bicarbonate, which, he says, should be given in doses of from 2 to 8 gm.

Deutsche medizinische Wochenschrift, Berlin

January 18, XXXVIII, No. 3, pp. 97-144

107 General Principles for Technic and Indications for Carbonated and Oxygenated Baths. (Technik und Indikationen der kohlensäure- und sauerstoffhaltigen Bäder.) F. Frankenhäuser.
108 *Technic for Making Plaster Casts. (Praktische Winke zur Gipsverbandtechnik.) F. Pels-Leusden.
109 *Strip of Fascia to Shut Off the Pylorus. (Umschnürung und Verschluss des Pylorus durch Faszienstreifen.) M. Wilms.
110 Immunization Against Experimental Trypanosomiasis. (Ueber Trypanosomen-Immunisierung.) H. Braun and E. Teichmann.
111 *The Poisonings at the Berlin Municipal Shelter. (Ueber die im Städtischen Asyl zu Berlin beobachteten Vergiftungen.) F. Strassmann.
112 Habitual Constipation. (Die habituelle Obstipation.) E. Fuld.
113 Salvarsan. (Salvarsan. Während eines Jahres gesammelte Erfahrungen.) M. Möller. (Salvarsan und Auge.) E. Reisserf.
114 Negative Wassermann Reaction in Lead Poisoning. (Wa. R. und Bleiintoxikation.) R. Hilgermann.
115 *Serodiagnosis and Treatment of Cancer. (Weitere Erfahrungen über serologische Diagnostik, Verlauf und Behandlung des Karzinoms.) A. Pinkuss. Commenced in No. 2.
116 The Question of Primary Suture After Mastoid Operation. (Ueber primären Schluss der Wunde nach Eröffnung des Warzenfortsatzes.) A. Blumenthal.
117 Connection Between Race and Crime. (Die Frage des Zusammenhangs zwischen Rasse und Verbrechen.) E. H. Rosenfeld.

108. **Plaster-of-Paris Dressings.**—Pels Leusden gives minute directions how to make plaster splints and casts, saying that they are generally made too thick and too wide. Six layers are generally enough and the bandage need not be narrower than five inches and should not be over four yards long. The cast contains nearly half its weight in water and it should be left exposed during the first twenty-four hours to let it dry out. He lays great stress on careful molding of the bandage to the part as it is being applied, keeping this up continually until the plaster sets. He advocates applying the bandage without regard to the natural openings, cutting them out after the plaster has set.

109. **Exclusion of Pylorus with Strip of Fascia.**—Wilms separates a strip of fascia from the anterior aspect of the rectus and uses the strip to throw around the pylorus, tying it or suturing it so as to exclude the pylorus completely. This, he says, is by far the simplest and safest means for the purpose, while it materially shortens operations on the stomach, requiring exclusion of the pylorus. It avoids further the reflex disturbances and resulting atony of the stomach when the pylorus is severed; he has had a case of extreme atony from this cause during the last year. It is possible, he adds, that a strip of fascia might be used in this way to exclude or fasten a segment of intestine, in entero-anastomosis, etc.

111. See Berlin Letter in THE JOURNAL February 3, p. 358.

115. **Diagnosis and Treatment of Cancer.**—Pinkuss reports extensive experimental and clinical research on various methods for serodiagnosis of cancer and on various methods of treatment. Among the points he has thus learned are that a negative antitrypsin reaction can be depended on to exclude cancer; positive findings are not so reliable as he occasionally obtained a positive reaction in other affections accompanied by much destruction of leukocytes, thus releasing the tryptic ferment. In malignant disease the reaction is the work of a proteolytic ferment generated by the cancer. The reaction becomes negative after removal of the cancer, and the persistence of the negative reactions excludes recurrence and metastasis. In seventeen operative cases he has since kept systematic supervision over the patients with this test. In five of the cases there has been suspicion of recurrence, but constantly negative findings with the test were confirmed by the course of the cases. In ten cases the persistence of a positive reaction showed the failure of the apparently radical operation to eradicate the malignant disease, and the patients have since died of metastasis. He advocates systematic application of the test at regular intervals after operations for cancer to detect recurrence in its incipient stage. (The technic was described in THE JOURNAL, July 4, 1908. It is based on the discovery that normal blood-serum contains sufficient antibodies to arrest the digesting action of a 1 per cent. solution of trypsin on the Loeffler plate in the proportion of 1 to 3.) Pinkuss reiterates his warning that a positive reaction should be estimated only in connection with the clinical picture as a whole. In a recent case a well nourished woman of 50 developed pain in the left sciatic nerve and the antitrypsin test gave strong positive findings. A tumor was discovered compressing the sciatic nerve, and microscopic examination disclosed it to be a metastatic osteoblastic carcinoma; the primary tumor is still undetected. Pinkuss comments on the peculiarly unfavorable influence of a pregnancy on malignant disease of the genital organs, and states that the methods of active immunization against cancer, which have proved effectual in animals, have given constantly negative results in the clinic, as also the attempts to apply pyocyanase, epinephrin, thymus extract, etc., all of which have some successes to their credit in cancer on animals. He thinks that it is still an open question whether cancer on animals can be compared with human cancer. (A previous article by Pinkuss on cancer was summarized in these columns Feb. 11, 1911, p. 463.)

Medizinische Klinik, Berlin

January 21, VIII, No. 3, pp. 91-132

118 *Danger from Methyl and Other Alcohols. (Verwendungsgefahren des Methylalkohols und anderer Alkohole.) L. Lewin.
119 Rectoscopy and Treatment Under Direct Inspection. (Technik und Indikationen der Recto-Romanoskopie und der endoskopischen Behandlung.) L. v. Aldor.
120 Electric Cataphoresis for the Eye. (Zur Technik der Jontophorese des Auges.) R. Wirtz.
121 Segment of Saphenous Vein Utilized to Close Gap After Removal of Aneurysm in Popliteal Artery. Goecke.
122 The Intracardiac Motor Centers of the Heart. (Zur Anatomie und Physiologie der intrakardialen motorischen Centren des Herzens.) W. Koch.
123 Is Methyl Alcohol a Poison? E. Rost.

118. **Toxicology of Methyl Alcohol.**—Lewin reviews his own research and the literature on this subject; among the data cited are experiments on laboratory animals by prolonged administration of small amounts of methyl alcohol, the temperature of the body declining and the animals dying in a comatose state. Sixty-three eggs into which alcohol was injected developed afterward normally in nearly 54 per cent. when ethyl alcohol had been used and in only 23.08 per cent. with methyl alcohol. His research on the effect on the eyes when methyl alcohol was incorporated or the fumes inhaled or the alcohol penetrated through the skin, confirmed the peculiar and powerful action of the alcohol in this respect, more certain, he declares, than with any other substance. The toxic action may be enhanced by admixture of other injurious substances when methyl alcohol is used in liquor, and he insists

on the necessity for legislative regulation of the production of liquor. In England there have long been laws penalizing the use of methyl alcohol for internal use in any way. Lewin adds that nearly all brandy and liqueurs from a scientific standpoint are denatured. Persons addicted to such drinks long for variety and this wish is catered to, so that it is impossible to say what synthetic and natural alcohols and flavoring substances may be added to produce the mixed drinks. There are certain other alcohols which are more toxic for man even than methyl alcohol, such as amyl alcohol. A recent analysis of a certain "superfine essential oil" revealed that 11.84 per cent. of the fluid was fusel oil. The number of ethereal oils used in the manufacture of brandies and liqueurs is considerable, and some of them—in combination with the other ingredients of the brandies, etc.—are undoubtedly injurious to health, as also certain other added substances, such as quillaja, Spanish soaproot, and certain coloring matters. He emphasizes the necessity for further research in this field.

Münchener medizinische Wochenschrift

January 16, LIX, No 3, pp. 121-176

124 *The Wassermann Reaction in the Cerebrospinal Fluid. (Ueber die Auswertungsmethode des Liquor cerebrospinalis vermittels der Wassermannschen Reaktion.) H. Neue.

125 Influence of Microbes on Action of Salvarsan. (Der Einfluss der Mikroben auf die Wirkung von Salvarsan.) W. L. and N. K. Yakimoff.

126 *Care of the Bladder After Suprapubic Incision. (Versorgung der Blase nach Sectio alta.) P. Janssen.

127 Operative Treatment of Prolapse of Rectum. (Ueber den Ersatz des Thiersch'schen Drahtringes bei der Operation des Mastdarmvorfalls durch geflochtene Seidenriemen, frei überpflanzte Gefass-, Sehnen-, Periost- oder Faszienstücke.) C. Henschen.

128 *Section of Posterior Spinal Nerve-Roots for Relief of Spastic Conditions and Sensory Crises. (Zur Förster'schen Operation: Spastische Zustände und sensible Krisen (Tabes) durch Resektion der hinteren Stränge des Rückenmarks zu bessern.) B. Heile.

129 *Be Cautious with Scopolamin! (Vorsicht mit dem Skopolamin!) F. Brunner.

130 Improved Technic for Roentgen-Ray Work. (Ueber rationellen Röhrenbetrieb in der Röntgentherapie.) H. Ritter. (Technik und Entwicklung des Einzelschlagverfahrens in der Röntgenaufnahme.) P. Dessauer.

131 Epidemic Occurrence of Disease of the Hair. (Trichorrhexis nodosa.) H. Hüber and E. Walter.

132 *Epidemic Occurrence of Acute Heart Disease in Children. (Ueber gehäuftes Auftreten von akut entzündlichen Herzerkrankungen im Kindesalter.) A. Forell.

133 Stretching the Prostate in Treatment of Hypertrophy. (Behandlung der Prostatahypertrophie durch Prostatadehnung.) F. Kraemer.

134 Circular Severing of the Lymphatics in Treatment of Phlegmons of the Arm. (Phlegmonenbehandlung der oberen Extremitäten mittels Zirkumzision.) K. Knoke.

135 Simultaneous Pregnancy in Both Fallopian Tubes. (Gleichzeitige Schwangerschaft in beiden Eileitern.) G. Davidsohn.

124. Wassermann Reaction in Cerebrospinal Fluid.—Neue took twice as much of the fluid for examination as Wassermann directs for the test, and found that when the reaction was negative with the smaller amount, it was sometimes possible to obtain a positive response with the larger quantity. Nonne thus obtained a positive response in forty-two of forty-four patients who gave a negative reaction with the original technic, and Neue reviews similar experiences with fourteen patients.

126. Care of the Bladder after Suprapubic Incision.—Janssen expatiates on the necessity for ample and thorough evacuation of the bladder before the incision; he pierces the wall with a trocar over which is slipped a rubber tube, connecting with a vessel below. By this means it is possible to evacuate the bladder completely, even when the pelvis is raised, before commencing the incision which can then be made vertically in the median line. He sutures the bladder completely and leaves a ball drain next to it, but not in contact, bringing the stem of the drain out through a buttonhole on one side below, supplementing this drain with two other long glass drains brought out through other buttonholes, to ensure against subcutaneous accumulations of blood. He leaves the retention catheter in place for twelve or fourteen days, and does not disturb the drainage of the prevesical space until convinced that the suture of the bladder is definitely consolidated. His results with this method have been invariably good.

128. Section of Posterior Nerve Roots for Spastic Paralysis.—Heile reports a case of Little's disease in a boy of 4 in which he practically cured the little patient by section of the second, third and fifth posterior lumbar roots and the second sacral on both sides, resecting 2 cm. of each. The improvement is the more remarkable as no operation was done on any muscles or tendons; the case is peculiarly instructive as an older brother had the same disease and was treated by the ordinary measures; his condition is by no means so good as that of the child whose nerve roots were resected. Heile also reports a case of tabetic gastric crises in which he performed the Foerster operation, resecting the seventh, eighth and ninth dorsal roots, but flaccid paralysis followed, the symptoms suggesting a transverse lesion of the spinal cord at the level of the operation. The patient succumbed four months later, and necropsy revealed softening of the spinal cord and that the posterior tracts were entirely destroyed at the site of the operation. Syphilitic changes in the vessels were undoubtedly responsible for the softening of the cord after the operation, as it could not have been directly injured. In future such mixed cases should be excluded from the Foerster operation. It is probable that the three cases reported by Henle, de Haan and Nonne belong in this category, as transient or permanent paralysis followed the section of the nerve roots. The spinal cord in Heile's case was incapable of functioning below the sixth dorsal segment, but yet the patient suffered from severe abdominal crises accompanying the gastric. The pains must therefore be referred to roots above this—which could not have been the case in this instance for reasons which he enumerates—or the vagus nerve must have been responsible for them and not the sympathetic, notwithstanding the fact that the patient presented the symptoms (hyperesthesia in the corresponding dorsal segment and exaggeration of the epigaster reflex) assumed to be characteristic of involvement of the sympathetic. The case teaches the wisdom of testing before operating to learn which of the great nerve systems is involved. Injection of epinephrin or atropin will determine whether the vagus or the sympathetic system is responsible for the trouble, or injection of a local anesthetic into the vertebral foramen will block the posterior roots involved. If it proves possible to arrest transiently the pain in a gastric crisis by such an epidural injection in the vertebral foramen, this will prove that the rami communicantes actually do transmit the pain. If on the other hand, the injection does not arrest the pain, we can assume that the vagus is the pain transmitter, and Exner's method of severing the vagus nerve above the cardia may be indicated instead of the Foerster technic. The epidural injection into the vertebral foramens may possibly prove an effectual therapeutic measure.

129. "Be Cautious with Scopolamin."—Brunner has had two cases of serious collapse under the scopolamin-pantopon-ether technic for anesthesia. One patient, a woman of 74, recovered, but the other, a corpulent man of 39, with sound heart and lungs, died from the effects of the anesthesia; the operation had been an inguinal herniotomy. Brunner gave strychnin as an antidote and noticed slight benefit under it, but says that he does not wish to stand sponsor to such an accumulation of heroic drugs as this makes. In future he intends to content himself with the older, tried technics, and warns the physician who uses the scopolamin technic that he must constantly bear in mind that he is working with a drug which is not harmless, and that he should beware especially of too large doses of morphin or pantopon with this technic.

132. Epidemic Acute Heart Disease.—Forell states that last June seven children, between 5 and 10, were brought to the policlinic in his charge, all with acute myocarditis or endocarditis, and all living near together; five of the children exhibited the first symptoms all within two days. Only in one case was there a pronounced sore throat at the onset, but two others complained that their throats hurt them, although free from objective findings. The affection began with an acute severe onset and ran a comparatively mild course, although there has been a relapse in two cases. None of the children complained of any joint pain or trouble except one who said that the back of her neck was sore and the left Achilles tendon. One of the children presented transient choreiform movements. In several cases the liver became enlarged and epistaxis was a frequent symptom. Diphtheria bacilli were excluded, but no positive bacteriologic findings are reported.

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Wiener klinische Wochenschrift, Vienna

January 11, XXV, No. 2, pp. 67-106

136 *Roentgenoscopic Differentiation of Gastric Ulcer and Cancer. (Die unterscheidenden Merkmale zwischen Magengeschwür und Magenkrebs im Röntgenbilde.) M. Haudek.

137 Sensitization by Incorporation of Fluorescent Substances. (Ueber die antagonistische Wirkung photodynamischer Sensibilisatoren auf ultraviolettes Licht.) A. Peruts.

138 *Gastric Mucosa Findings with Ulcer and Cancer. (Magenschleimhautbefunde bei Ulcus ventriculi und Karzinom.) H. Heyrovsky.

139 Drinking-Water in Causation of Goiter. (Ueber Ursache und Wesen des Kropfes.) B. Breitner.

140 Severe Cicatricial Changes in Treatment of Trachoma with Carbon-Dioxid Snow. (Zur Behandlung des Trachoms mit Kohlensäureschnee.) F. Rössler.

141 *Treatment of Tetanus. (Ueber ein neues Tetanusheilverfahren.) Kras.

142 Decadence of Family of Julius Cesar. (Zur Pathographie der Julischen Dynastie.) F. Kanngiesser.

January 18, No. 3, pp. 107-146

143 Monkeys Surviving After Removal of the Brain. (Affen ohne Grosshirn.) J. P. Karplus and A. Kreidl.

144 Diagnosis and Treatment of Tuberculosis. (Bestimmung und Behandlung der tuberkulösen Infektion mittels antitoxischer Mittel.) E. Wein.

145 Radium in Therapeutics. (Ueber St. Joachimstaler Radiumträger und einige ihrer Strahlenwirkungen.) F. Dantwitz.

146 *Technic for Tonsillectomy. (Eine neue Methode der Radikaloperation der Tonsille.) S. Tenzer.

136. **Roentgenoscopy of Gastric Cancer and Ulcer.**—Haudek's work issues from the Roentgen laboratory in charge of Holzknecht at the Vienna general hospital, and discusses, with illustrations, the points which differentiate ulcer from cancer. He says that great reliance can be placed on the findings in regard to motor functioning. An ulcer anywhere in the stomach tends to induce spastic contraction of the pylorus, and thus retards the emptying of the stomach. With cancer, on the other hand, the pylorus is constantly gaping, so that the ingesta pass smoothly along into the duodenum. With an ulcer the outline of the shadow cast by the stomach contents is smooth, while with cancer of the pyloric region the outline is ragged on the right side. With an ulcer in the lesser curvature the shadow lies to the left of the umbilicus, the right edge perpendicular or sloping upwards slightly toward the left. He investigates the motor functioning first, giving the patient a test meal of 40 gm. bismuth carbonate in 300 gm. porridge. The shadows cast, when examined six hours later, are characteristic, especially with stenosis of the pylorus, the broad, shallow half circle extending each side of the umbilicus.

138. **Stomach Mucosa Findings with Cancer and Ulcer.**—Heyrovsky reports the histologic findings in 120 cases of gastric ulcer and in twenty-eight of gastric cancer, and states that he was able to ascertain the present health of forty-three patients given operative treatment for gastric ulcer. Among those whose mucosa had been found healthy at the time of the operation, 64.6 per cent. were free from disturbances, while only 46.2 per cent. were thus free among the patients whose stomach showed signs of gastritis at the time of the operation.

141. **Treatment of Tetanus.**—Kras was unable to obtain antitetanus serum in the extremely serious case reported, and he treated the patient, a mulatto of 25, by cauterizing the wound, withdrawing 500 c.c of blood and infusing a similar amount of saline solution, and then allowing all the cerebrospinal fluid that dripped slowly from a lumbar puncture to escape. He then washed out the cerebrospinal canal with physiologic salt solution containing 0.3 per cent. sugar, and left two syringefuls in the canal. These procedures were repeated the next day, giving an hour each time to them, washing out the canal with a liter of the saline, a drop at a time. The reaction, severe the first day, was much milder the second, and the patient afterward dropped to sleep and began to mend, and the procedures were repeated during the first five days, using smaller amounts, and the man left the hospital cured, the twelfth day. Kras states that the prognosis in this case had been unequivocally grave, and his success encourages him to try this method at need for patients who have developed hydrophobia.

146. **Tonsillectomy.**—Tenzer describes Sluder's method (illustrated in THE JOURNAL March 25, 1911, page 867) with appreciative comment remarking that the world has the Americans to thank for the best method of removing the tonsils in adults, and now Sluder has made it possible to remove the tonsils of children with a relatively simple technic. He adds that it is for pediatrists now to determine whether enucleation, according to Sluder, is to become the standard procedure instead of tonsillotomy.

Zentralblatt für Chirurgie, Leipsic

January 20, XXXIX, No. 3, pp. 73-104

147 Intratracheal Insufflation and Peroral Intubation. (Meltzer's Verfahren und die perorale Intubation.) F. Kuhn.

Zentralblatt für Gynäkologie, Leipsic

January 20, XXXVI, No. 3, pp. 65-96

148 Salvarsan in the Treatment of the Newly Born; Seven Cases. (Zur Technik und Dosierung der Salvarsaninjektionen bei der Behandlung von Neugeborenen.) F. Engelmann.

149 *Vaginal Amputation and Resection of the Body of the Uterus. (Vaginale Korpusamputation und Korpusresektion.) A. Rieck.

149. **Vaginal Oblique Resection of Body of Uterus.**—Rieck gives an illustrated description of his technic for resection of the uterus instead of amputation. It avoids the wedge excision and suturing of raw surfaces, and the abdominal cavity is walled off beforehand, the resection being entirely extraperitoneal, the ovaries and part of the tubes being shut off above. The oblique resection leaves the remaining portion in better shape to conform to the vagina and bladder. He draws out the body of the uterus with forceps, seizing it at each upper corner, and tilts it first to one side and then to the other to permit suturing the peritoneum together behind and over it to wall off the abdominal cavity water-tight. The operation is indicated for excessive uterine hemorrhage from any cause, myoma, metritis, arteriosclerosis, nervous or ovarian disturbances, and especially for excessive menstruation in young women without any local pathologic findings, rendering the women intensely anemic, weak and nervous from the constant losses of blood which nothing seems able to arrest except removal of part of the uterus. This, by the technic described, permits continuance of menstruation. One of Rieck's patients, a woman of 32, had become extremely debilitated by excessive menstrual hemorrhages for three years, rebellious to curetting and the ordinary measures, but she has had apparently normal menstruation during the twenty-one months since the operation and is strong and well. The same success is recorded in the case of a woman of 40 with excessive menstrual hemorrhages lasting for eight or ten days each time. At the regular period after the operation, menstruation occurred with slight hemorrhage and has recurred in this form during the four months to date. He regards vaginal resection of the body of the uterus as thus a certain, almost harmless and rapid means of reducing excessive menstruation to normal proportions.

Gazzetta degli Ospedali e delle Cliniche, Milan

January 16, XXXIII, No. 7, pp. 65-72

150 Concrements in the Lungs. (Caso di calcolosi polmonare.) U. Morandi.

Revista de Medicina y Cirugia, Havana

January 25, XVI, No. 2, pp. 35-62

151 *Fatal Eclampsia Following Eating of Oranges; Two Cases. (El zumo de la naranja respecto a la eclampsia en la gestacion y el puerperio.) N. Lugo-Viña.

151. **Oranges and Eclampsia.**—In the two cases described the women had had some albuminuria, but no actual symptoms of eclampsia until after taking the juice of several oranges on an empty stomach or eating freely of an orange preserve. The first woman was in the eighth month of pregnancy; the other had been delivered at term a week before. In both the convulsions came on in the night and the women died within twenty-four hours. Lugo-Viña suggests that the orange juice may have had a special toxic action on the albuminuric women, similar to the toxicity of the *tanghin*, a Madagascar plant, for persons with a tendency to albuminuria. The oranges in the first case were of the kind known locally as *chinas*.

Hospitalstidende, Copenhagen

December 13, LIV, No. 50, pp. 1441-1472

152 Bismuth Salts Not Capable of Neutralizing Gastric Acidity. (Nogle Bemærkninger om Subnitras bismuth. og Carb. bismuth. som syremættende Midler.) C. Lundsgaard.

December 20, No. 51, pp. 1473-1520

153 *Atony of the Stomach. (Atonia ventriculi.) K. Faber. Commenced in No. 50.

153. **Atony of Stomach.**—Faber reviews the literature and the various theories in regard to motor insufficiency and dilatation of the stomach resulting from atony, and analyzes his own experience with 259 patients with chronic dyspepsia, twenty-nine with gastric cancer, eighty-eight with ulcer in the stomach or duodenum, and ninety-four with gastritis. He investigated the motor functioning of the stomach in 560 patients, including seventy with evidences of gastroptosis. This material shows that chronic atonic insufficiency and chronic atonic dilatation may occur together, but are not necessarily associated. The insufficiency is due to defective functioning of the lesser curvature which does most of the active mechanical work of the stomach. The greater curvature is more passive, and when the musculature is undernourished it weakens and stretches. He protests against the term gastroptosis as the whole stomach does not sag; the greater curvature merely stretches lengthwise and sags low, but the cardia and pylorus remain at the normal levels. The whole trouble in atony of the stomach is, he insists, the result of weakness of the nerves with or in consequence of lack of sufficient nourishment. He rejects Stiller's assumption of a congenital asthenia of the stomach, as, under appropriate tonic, physical and dietetic measures, extra nourishing food, out-door life and measures to cure insomnia, the digestion and assimilation are restored to normal and all the signs of gastroptosis gradually disappear. Dyspeptics grow nervous, and this may lead to loss of appetite or vomiting or both. Undernourishment and comparative emaciation may entail atonic motor insufficiency or dilatation or both. He says of atony with acute dilatation that it probably occurs with unsuspected frequency after errors in diet, but usually rights itself spontaneously. He does not agree with Tissier in regard to the swallowing of air as such an important factor in acute postoperative dilatation, ascribing the latter more to a paralyzing action from the anesthetic.

Hygiea, Stockholm

December, LXXIII, No. 12, pp. 1313-1440

154 Analysis of the Records for a Hundred Years of Stockholm Maternity. (Om den obstetriska verksamheten vid barnbördshuset Pro Patria under 100-årsperioden 1780-1880.) O. H. Forssell.

155 Egypt as a Health Resort. (Egypten och särskildt Assuan såsom klimatisk kurort.) E. Schacht.

156 Epidemic of Typhoid at Göteborg; 176 Cases. (Några meddelanden från en nervfeberepidemi.) H. Wennerberg.

157 Medical Impressions of America. (Reseintryck och kirurgiska erfarenheter från en studieresa i Nordamerika.) J. Borelius.

Nordiskt Medicinskt Arkiv, Stockholm

XLIV, No. 2. Last indexed Nov. 25, 1911, p. 1810

158 *Albuminuria After Severe Physical Exercise. (Die Anstrengungsalbuminurie.) I. Jundell and K. A. E. Fries. To be continued.

159 *Acute Nephritis in Children. (Akute Nephritis in den Kinder- und Jugendjahren mit besonderer Berücksichtigung der Prognose.) H. Ernberg.

157. **Athletics and Transient Albuminuria.**—The transient nature of the kidney findings in athletes after severe physical exercise, as determined by Jundell and Fries, was emphasized in the first part of their article summarized in THE JOURNAL, Nov. 25, 1911, page 1810.

158. **Acute Nephritis in Children in Respect to Prognosis in Later Life.**—Ernberg recently reviewed the records and systematically reexamined all he could relocate of 106 persons who had had acute nephritis before the age of 15, and 50, whose acute nephritis occurred between the age of 15 and 30. The intervals since the nephritis ranged from sixteen to twenty-three years. The nephritis occurred in connection with some acute infectious disease in all but twenty-seven in the first group, but in none of the forty individuals he was able to reexamine were there any signs or symptoms suggesting that the kidneys were below par. The same negative findings were observed in most of the sixteen relocated and reexamined in the group of fifty older patients. Two whose nephritis had been of a subacute type, had albuminuria when reexamined, and he thinks that their subacute nephritis was probably the beginning of chronic disease of the kidney. In two other cases evidences of nephritis were discovered, but various circumstances indicated that the nephritis had developed quite recently from other causes and not in connection with the nephritis so many years before. His experience shows further that even when albuminuria persists for a time after acute nephritis, if there are no other signs of nephritis, the prognosis is good and the albuminuria gradually subsides. Orthostatic albuminuria was not encountered in any of the patients reexamined, showing that acute nephritis does not afford a predisposition for this later. All the patients reexamined were tested several times and always in the morning.

Books Received

Books received are acknowledged in this column and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for review in the interests of our readers and as space permits.

THE ACCESSORY SINUSES OF THE NOSE IN CHILDREN. By Prof. Dr. A. Onodi, Director of the University Clinic for Diseases of the Nose and Throat in Budapest. With a Preface by Prof. Dr. W. Waldeyer, Director of the Anatomical Institute of the University of Berlin. Translated by Carl Prausnitz, M.D., M.R.C.S., L.R.C.P., Head of the Hydrophobia Department of the Hygienic Institute University of Breslau. Cloth. Price, $7. One Hundred and Two Plates. New York: William Wood & Co., 1911.

DENTAL ANESTHETICS. A Text-Book for Students and Practitioners. By Wilfred E. Alderson, M.D., M.S., B.Hy., D.P.H., Honorary Physician, Newcastle-on-Tyne Dispensary. With a Contribution on Analgesia by John Bolam, L.D.S., Honorary Assistant Dental Surgeon, Newcastle-on-Tyne Dental Hospital. Cloth. Price, $1.25. Pp. 100. New York: William Wood & Co., 1911.

HANDBOOK OF MENTAL EXAMINATION METHODS. By Shepherd Ivory Franz, Ph.D., Scientific Director and Psychologist, Government Hospital for the Insane. Nervous and Mental Disease Monograph Series No. 10. Paper. Pp. 165, with illustrations. New York: Journal of Nervous and Mental Disease Publishing Company, 1912.

A POCKET ATLAS AND TEXT-BOOK OF THE FUNDUS OCULI. With Note and Drawing Book. Text by G. Lindsay Johnson, M.A., M.D., F.R.C.S. With 99 Drawings from Life by Arthur W. Head, F.Z.S. Cloth. Price, $2.50. Pp. 205. Chicago: F. A. Hardy & Co., 10 S. Wabash Avenue.

A COMPEND OF GENITO-URINARY DISEASES AND SYPHILIS. Including Their Surgery and Treatment. By Charles S. Hirsch, M.D. Second Edition. Blakiston's Quiz Compends. Cloth. Price, $1.25. Pp. 359, with 74 illustrations. Philadelphia: P. Blakiston's Son & Co., 1912.

ROENTGEN-DIAGNOSTIK DER ERKRANKUNGEN DES KOPFES. Von Privatdozent Dr. Artur Schüller, Vorstand der Nervenabteilung am Kaiser Franz Josef-Ambulatorium in Wien. Paper. Price, 7.80 marks. Pp. 219, with illustrations. Vienna: Alfred Hölder, 1912.

STUDIES IN PSYCHIATRY. By Members of the New York Psychiatrical Society. Volume 1. Nervous and Mental Disease Monograph Series No. 9. Paper. Pp. 222. New York: Journal of Nervous and Mental Disease Publishing Company, 1912.

PRAKTISCHE ANLEITUNG ZUR SYPHILISDIAGNOSE AUF BIOLOGISCHEN WEGE (Spirochæten-Nachweis, Wassermann'sche Reaktion). Von Dr. P. Mulzer. Second Edition. Cloth. Price, 4.80 marks. Pp. 129, with 20 illustrations. Berlin: Julius Springer, 1912.

PLEURISY, INCLUDING EMPYEMA AND BRONCHIECTATIC CONDITIONS. By James, M.D., F.R.C.P.E., Consulting Physician to the Edinburgh Royal Infirmary. Cloth. Price, $2.25. Pp. 243, with illustrations. New York: William Wood & Co., 1911.

HEREDITY AND SOCIETY. By William Cecil Dampier Whetham, M.A., F.R.S., Fellow and Tutor of Trinity College, Cambridge, and Catherine Durning Whetham, His Wife. Cloth. Price, $2. Pp. 190. New York: Longmans, Green & Co., 1912.

FORTSCHRITTE DER NATURWISSENSCHAFTLICHEN FORSCHUNG. Herausgegeben von Prof. Dr. Emil Abderhalden, Halle a. S. Volume 4. Paper. Price, 15 marks. Pp. 299, with 110 illustrations. Berlin: Urban & Schwarzenberg, 1912.

THE CRIMINAL AND THE COMMUNITY. By James Devon, Medical Officer of H. M. Prison at Glasgow, with an Introduction by Prof. A. F. Murison, LL.D. Cloth. Price, $1.75 net. Pp. 348. New York: John Lane Company, 1912.

AMERICAN MEDICINAL LEAVES AND HERBS. By Alice Henkel, Assistant, Drug-Plant Investigations. Paper. Pp. 56, with 36 illustrations. United States Department of Agriculture, Bureau of Plant Industry, Bulletin No. 219.

THE TRAGEDY OF CORIOLANUS. Edited by Stuart P. Sherman, Ph.D., Professor of English in the University of Illinois. Tudor Edition of Shakespeare. Cloth. Price, $0.85. Pp. 191. New York: Macmillan Company, 1912.

WAR LETTERS OF WILLIAM THOMPSON LUSK, CAPTAIN, ASSISTANT ADJUTANT GENERAL, U. S. VOLUNTEERS, 1861-1863. Afterward M.D., LL.D. Cloth. Pp. 304. New York: Printed for private circulation only.

MATERNITY PRIMER. By A. H. F. Barbour, M.D., LL.D., Physician to the Edinburgh Royal Maternity Hospital. Cloth. Price, $0.75. Pp. 165, with 67 illustrations. New York: William Wood & Co., 1912.

THE FRIENDS OF THE INSANE, THE SOUL OF MEDICAL EDUCATION AND OTHER ESSAYS. By Bayard Holmes, M.D. Cloth. Price, $1. Pp. 270. Cincinnati: Lancet-Clinic Publishing Company, 1911.

THE ORIENTATION OF BUILDING OR PLANNING FOR SUNLIGHT. By William Atkinson. First Edition. Cloth. Price, $2. Pp. 139. New York: John Wiley & Sons, 1912.

THE WALTHAM BABY HOSPITAL. Tenth Annual Report, 1912. Paper.